YACHTING

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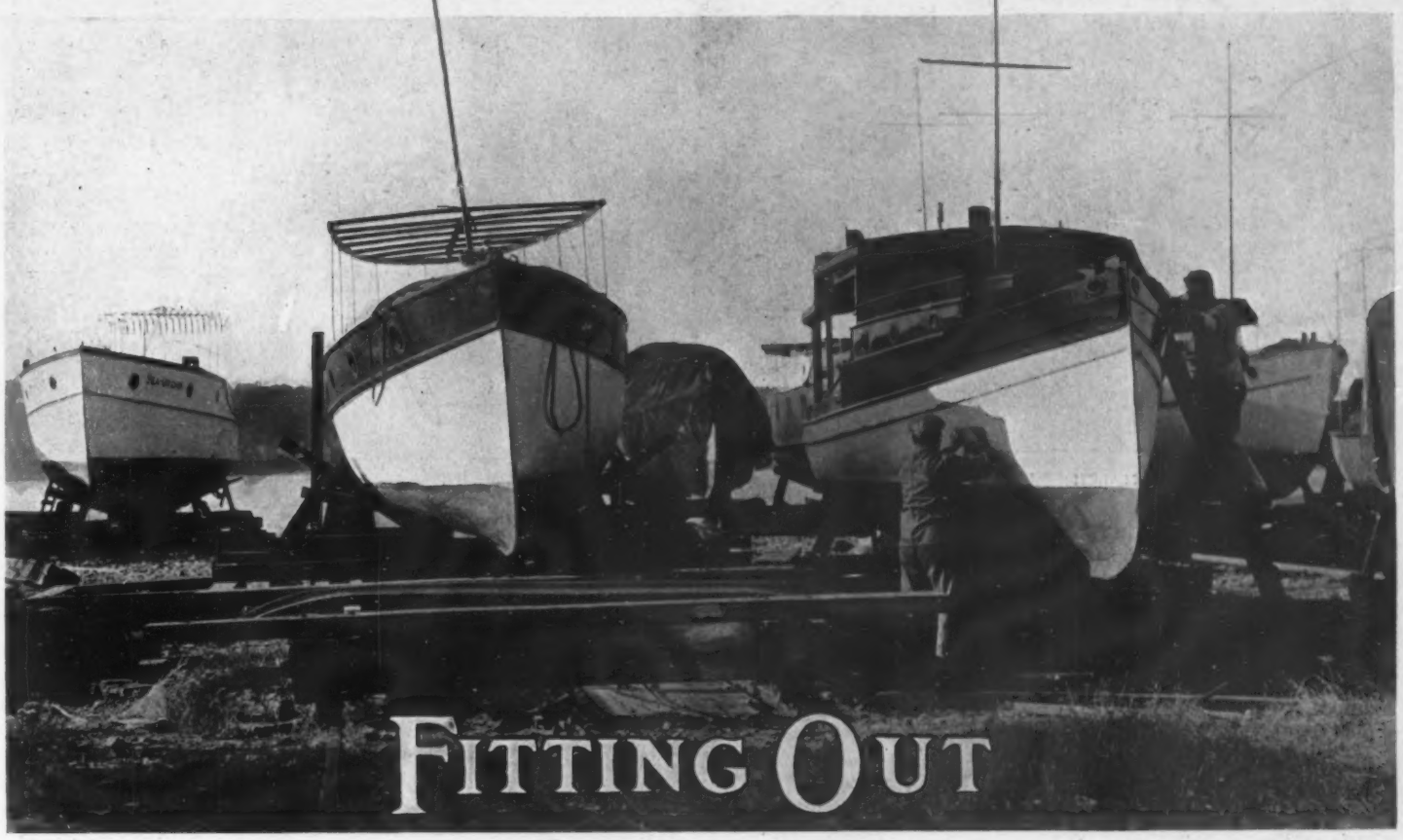


FITTING OUT

Some Pointers on the Spring Overhaul for the Man Who Does His Own Work

Photographs by M. Rosenfeld

IT would not be real spring if one could not read a lot of articles about getting the boat ready for the summer campaign. It is just as much a sign of the times as is the renewed activity in the boat yards and the excuses that the lucky boat owner makes to be away from home every Saturday afternoon and Sunday. This year everything points to the most active summer on the water we have ever had. There will be more boats afloat and consequently more men will be busy after the sun crosses the Line getting their craft ready to go overboard than ever before. Here are some hints that will help you with the work. Even if you have done this job many times before and think you know it all, there is still always something to learn that will make the work lighter or enable you to turn out a "shippier" job.

Take Time to Prepare the Boat for the Work

Take plenty of time to prepare the boat thoroughly for the work of scraping, painting and varnishing. A day or two spent in this work will save you time in the end. After taking the cover off, drying it and putting it away for the following season, open the boat up and give her a thorough airing, letting the air circulate through cabin, lockers and under floors and decks, to get her thoroughly dry where she has sweated during the cold weather.

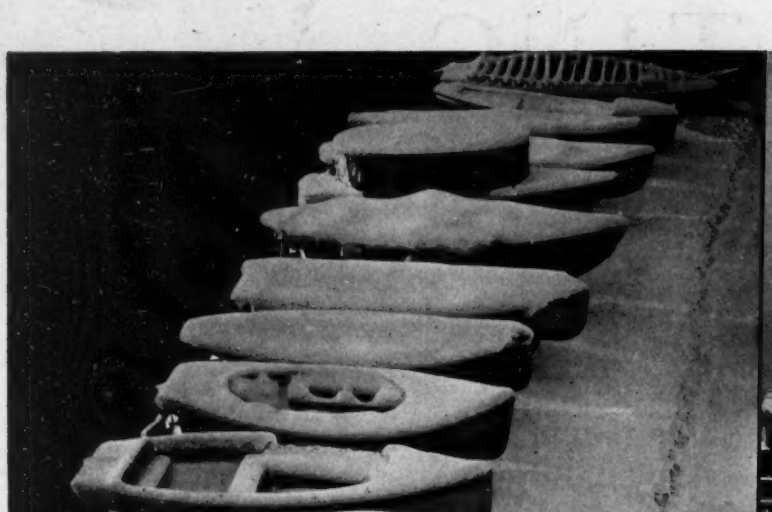
You will probably find numerous stains on the decks and sides due to the water seeping through the canvas where it has sagged or where some thoughtful soul has torn it in an endeavor to get inside during the winter and hasn't taken as much care in refastening the cover as he did in opening it up. A little dust and dirt mixed with the puddle that filters through make an ugly stain. It is therefore advisable to scrub the boat thoroughly outside, on topsides, deck and cabin house, before scraping or painting. Often this will save going down to the wood to remove the stain by scraping, as the "body" of the paint or varnish may be in good shape beneath. Soap or washing powder, water and a scrubbing brush will do wonders on white wood work. Pumice instead of soap will take the outer surface off easily, and, especially for varnished surfaces, pumicestone, water and a piece of old canvas to rub it on, will save much elbow grease with the scraper, only it is a dirty job.

If your decks and bright work have been well varnished before laying the boat up, much work will be saved in the spring; but if the varnish is discolored and full of blisters or flakes, it will have to be taken down to the wood. Likewise, if the topsides are full of blisters or the paint is chipped in spots, showing the bare wood, a good job cannot be turned out without burning off or getting right down to the wood. Along the water line a sediment of water and grease is apt to have formed, making it difficult for the scraper to take hold, yet a good scrubbing will frequently take it off.

Scrapers

To do any good work one must have good tools, and the scraper is an important part of your outfit. You can get boat scrapers of various kinds. Some are good and some are not worth anything for the work to which the amateur puts them. The regular triangular boat scraper, which is practically a plumber's scraper, is all right for certain work, but it is a hard tool to work with and for much of the work on a boat is not as good as a file scraper or a cabinet scraper.

The former is made from old flat files from 8 to 10 inches long, with one end heated, bent over, hammered out wide and flat and the edge sharpened. A blacksmith can do this work and a grindstone will put a sharp edge on it. The rough end used for the handle can be wound with tire tape to make it easier on the hand. A flat file will keep them sharp. Maybe you can induce the boatyard proprietor to part with one or two if you cannot make them.



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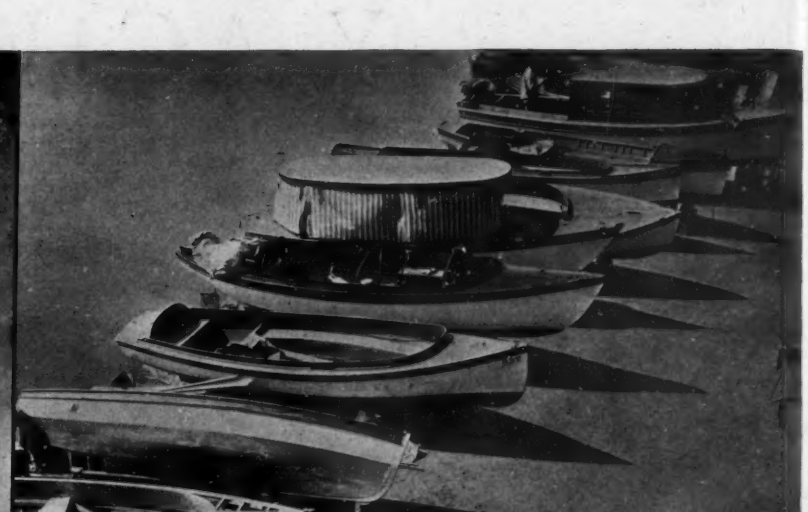


APRIL

A triangular scraper is all right for the bottom of boats and for getting into out-of-the-way corners and so forth. For flat work, such as deck, cockpit and the like, which are varnished, the cabinet scraper—a thin oblong sheet of steel—will be found best. It will take off all dead varnish in thin sheets without danger of cutting the deck. These scrapers can be had at any ship chandler's store, and can be sharpened with the tang end of a file. For tongue-and-groove work or mouldings, where it is necessary to get into recesses, you can file points on one of your cabinet scrapers to fit the work. Be careful to hold the scrapers flat and see that the corners do not dig into the woodwork, making a gouge that is sure to show through its varnished surface. Decks or bulkheads can be spoiled very easily by carelessness in this respect.

Before scraping the deck it is better to take off all brass deck fittings, such as cleats, chocks and the like, than it is to try to scrape around them. They can be put back after the scraping is done and the deck varnished. If you start scraping on a day that is at all doubtful as to weather, keep a pot of shellac handy, so that you can slap on a coat if you have to knock off on account of rain. Otherwise the water will turn the exposed wood black.

POINTING UP SEAMS

Paint and varnish removers can be had to-day that lighten the task of scraping immeasurably. With a good varnish remover two applications enable you to get down to the bare wood with the scraper very quickly, and will even be effective on old paint. The acids in these removers softens the paint or varnish so that it peels off easily under the scraper. The remover can be bought at any paint store or from any dealer in marine hardware.

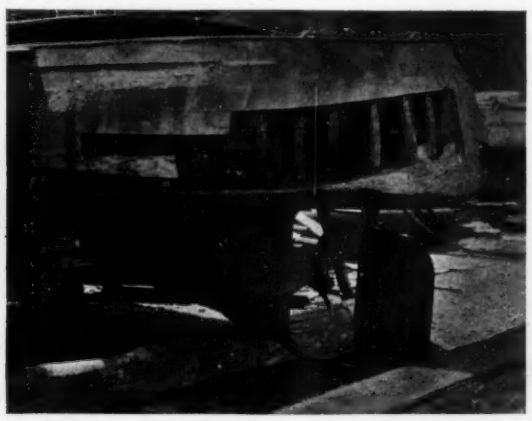
Look Over the Seams

After cleaning and scraping the bottom before putting on the copper paint, look over the seams to note the condition of the caulking. It will probably be found that most of the seams are hard, only needing pointing up with putty; but if the cotton is black and soft and protrudes from the seam in places so that the knife sinks in easily, it is time to recaulk. To do the job thoroughly, it is best to get out all the old cotton and clean seam with a knife. If the seam is too tight to be cleaned with a sharp knife, open it by driving in the caulking iron here and there along its length.

For small boats, cotton caulking is preferable to oakum, as the latter is too coarse. To caulk well, you need a mallet and a couple of caulking irons, or a small caulking wheel made of brass or steel, set in the end of an oak handle, that will roll into the seam. This latter is only suitable for small boats. Drive in the caulking well at the beginning and keep twisting it as you drive it in. If the seams are thin, a long thread of cotton may be twisted and laid along them and then rolled in with the wheel, so that it is about a quarter or three-eighths of an inch below the surface of the planking. If the seams are large in places, a thin caulking iron should be used, and the cotton, instead of lying in a straight string, should be

(*Continued on page 262*)

GARBOARD SEAMS TAKE A LOT OF CALKING



PUTTING IN NEW PLANK

THIS BOTTOM WILL NEED A SCRAPER

The Value of Proper Equipment for Your Boat

By CHARLES H. HALL

Almost as important a consideration from the point of safety and seaworthiness in the boat as good design, honest material and labor, and a well-built, reliable engine, is the equipment with which she is provided. The best hull in the world is only as strong as her weakest part, and a faulty steering gear, poorly made or inadequate ground tackle and shoddy navigating equipment, will frequently spell disaster if it fails in the work it is designed to do. Nowhere does quality count for more. Manufacturers realize this, and turn out honest goods, so that it is usually only a matter of knowing what to buy and the proper size and kind of any particular article to get a satisfactory outfit. Yet there is good equipment and bad equipment—bad in design and inadequate for the work it is intended to do, chiefly because the maker does not understand the nature of the service to which it will be put. This article of our series tells the difference between the good and the bad, why the bad is bad and how it can be made better. The boat owner will find here much to guide him in an appreciation of what he should look for in order to get a serviceable outfit.

THERE is an old nautical adage about "spoiling the ship for a ha'p'orth o' tar," which well applies to all equipment installed on the modern motor yacht. The owner should not begrudge the difference in cost between good articles and poor ones, as his comfort and sometimes even the safety of the vessel may depend on having good gear. The material should be of the best, and not only that, but properly suited for the purpose for which it is used. Brass castings may look very pretty, but are frequently not so well adapted as plain galvanized iron. The matter of brass castings is an important one, too, as yellow brass should not be used where strength is required, but a good, strong bronze should be installed instead. Common yellow brass is largely made up of dirty scrap, while bronze is, or should be, cast from clear, new metal.

With all the articles intended for boat equipment quality should be the thing sought. When off on a cruise the equipment and the tools you have to work with *must make good*. You can not get a spare cleat in the middle of Long Island Sound, nor a new side light half way to Bermuda. Even when in port, the failure of any article means at least a trip ashore and a visit to the supply house. The small saving in the price of ground tackle will be no consolation when you find your boat bilged on a ledge of rocks and one fluke of your cheap anchor gone or your "bargain" chain parted at a defective link. Cleats that pull out by the roots with a little strain, tearing up your pretty mahogany plank sheer, do not look as economical as they did, particularly as you may have to set in a graving piece to cover the scar.

As an old engineer once said to me: "We have to be pessimists in marine work. We cannot put a thing aboard ship that will work only under favorable conditions—it must always be ready for business. In laying out steam or feed piping, for instance, we have to imagine failure at various places and still be able to get steam or to feed the boilers. Much of the gear must be in duplicate; some of it may never be really needed, but it may be, and so must go in." This man had had a long experience with repair work and knew how badly some fairweather gear worked in foul weather.

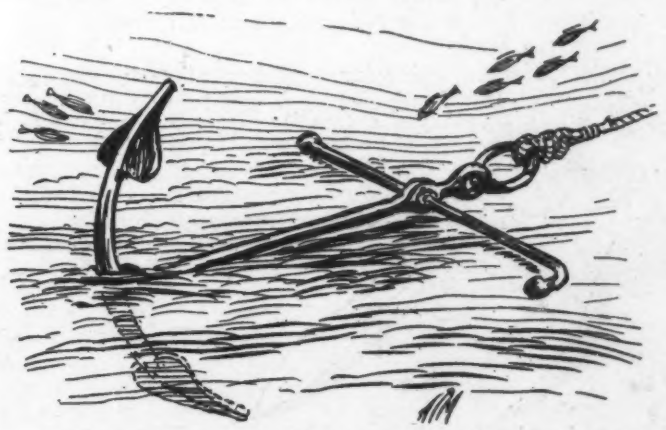
A merchant captain once saw an electric winch which was under consideration for his ship. It looked well and worked beautifully in the builders' yard. When asked his opinion he said: "Turn a stream of salt water from that hose on it for half an hour and then let's see how she works!" When the builder protested the wily seaman pointed out that the winch was to go on his ship's deck and would be almost continuously submerged when bucking a heavy head sea.

This is the attitude to take when buying new equipment. Not only does this fitting or device appear well designed and proportioned, of good material and easy to work *now*, but will it stand the excessive strain that may come on it some day? Will it work if neglected and allowed to collect dirt and rust on the internal parts? How will wear or a season's abuse affect it? Is the manufacturer reliable and is his reputation good as to quality of product? Can spare parts be obtained readily? And the more important and useful the fitting, the more necessary these heart searchings. Just picture to yourself all the things that might happen if the device fails. Not only are workmanship and design to be sought in general, but in detail.

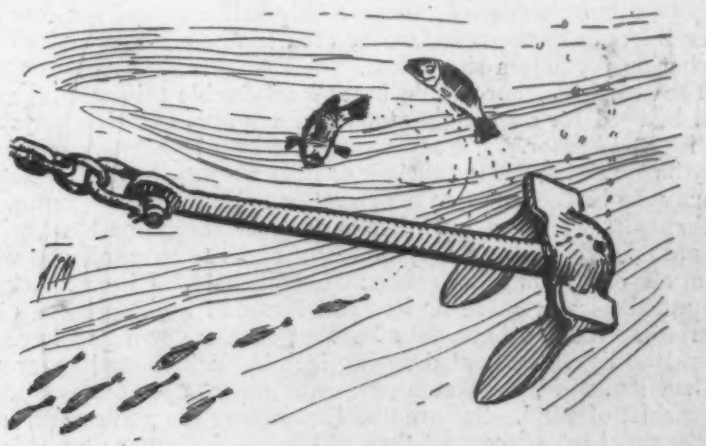
When the U. S. S. Charleston was chasing the Itata down the west coast about twenty years ago the main engines kept at their work beautifully, but there was constant trouble with the anxiliaries—not in the way of a general breakdown, but some little ⅜ nut on some blower tucked away in a pocket in the bunker bulkhead would work loose and there would be a merry time for the black gang until it was fixed. The main engines had had all their details carefully thought out; the little auxiliaries hadn't.

So there's no use building a fine, big, up-to-date cruiser and installing a windlass that won't get the anchor if a mosquito's starboard midship foot gets jammed in the gears. No use buying a pretty mahogany-trimmed dinghy and trying to hoist her out on davits so light that they spring with her weight. No use getting heavy polished brass cleats and fastening them down with tiny screws, or letting in heavy chocks with a bulwark too light to stand any strain. Have all your gear good and stout and well fastened, so that you won't have to nurse your boat when bad weather comes, but can ride out the gale with the big anchor down and plenty of cable out, or go out and "sock it to her" if the spirit so moves you.

About the most important item of equipment is the ground tackle, which includes anchors, chains or cables, windlass or capstan, and, in fact, all the gear used in and about the anchor. There



THE OLD-FASHIONED WROUGHT IRON KEDGE ANCHOR, WITH REMOVABLE STOCK, BURIES ITSELF DEEP AND HAS GOOD HOLDING POWER



A NEW BALL AND SOCKET STOCKLESS ANCHOR THAT IS VERY STRONGLY MADE

A RELEASING HOOK FOR ANCHOR, WITH EYE FOR TRIPPING LINE.

AN EXCELLENT TYPE OF DAVIT-HEAD THAT IS NEAT AND STRONG

are numerous patent anchors of various types on the market, some of which are good and some not so good, but the writer's preference is the old-fashioned wrought iron anchor, with shifting stock for convenience in stowing. One of the advantages claimed for the stockless anchors is that they may be drawn up into the hawse pipe so that the labor of catting and fishing is avoided. These anchors are made in two pieces, one casting, consisting of arms and flukes, being pivoted at the end of the shank, so that there are two flukes to bite the ground. A projection on the casting trips it so that the flukes will bite. When the tide turns and the vessel swings to her anchor, unless it is very deeply imbedded, there are chances that she may break it out, and a new grip must be gotten on the ground. I have seen a stockless anchor slide over a hard bottom without taking hold at all, although a good scope of cable was veered. If this type is used, it should be of the best cast steel, and should be carefully inspected and tested by hammering, which *may* reveal the presence of any hidden defects, such as blowholes, shrinkage cranks, etc., though sometimes a steel casting will not reveal any defect until failure takes place. I have seen a large cast steel rudder stock, which was apparently well tested, inspected and passed, display blowholes just below the surface, which became evident when the second cut was taken in the lathe.

On the other hand, the old-fashioned wrought iron anchor, preferably forged out of one piece, and certainly with no jump welds anywhere in its structure, will, if properly designed, bury itself completely out of sight in a soft bottom. This type should have long shank and stock, and long arms, and the flukes not too broad. See that the stock has a collar forged on at its middle, not simply pinned in place. Don't get the short stumpy kind. They may be all right on some kinds of bottom, but have not the wide range of usefulness that the fisherman type has. On a hard bottom, when the vessel tends at the turn of the tide, if the anchor breaks out at all the stock lying along the ground will roll the hook over for a fresh bite.

Above all have the anchor heavy enough. It is well to have two or even three in a boat of over forty feet in length. One may be a light kedge weighing possibly half a pound per foot of overall length of the vessel, to be used in fine weather and when anchoring for only a short time.

The stream anchor should be at least double this weight, and will be used for over night stops or for a stay of a few days in a sheltered harbor. The sheet anchor should be a heavy one and may be stowed under the cockpit or in some out-of-the-way place. It may not be needed more than once or twice during the summer, perhaps not even then, but when you are anchored in a blow, with an old pile wharf or an ugly bunch of rocks to leeward, you will want above all things an anchor that will *hold*. I have knocked around the water more or less and know of nothing more disheartening than to have your heaviest anchor down and have it prove too light, the boat dragging inch by inch toward apparent destruction, while you watch your cross-ranges open out and pray for a shift of wind. Be sure that the anchors are galvanized, and by the usual hot process, as they will be much cleaner than if left black.

Due thought must be given to the proper stowage of the anchor on deck. A good bed of wood must be set on deck and fitted to the anchor and provided with ring bolts for the shank painter and ring stopper. Space must also be provided forward for the proper working of the ground tackle. In too many boats we see the windlass or capstan jambed way up forward, thus giving more deck room aft, but not allowing space enough between capstan and hawsepipe for the proper working of the gear. Such an arrangement may look very well at the motor boat show or in dock, but when you come to get the anchor on a "dusty" night, you want plenty of room to work without tripping over everything on deck, and swearing at the owner, builder and designer.

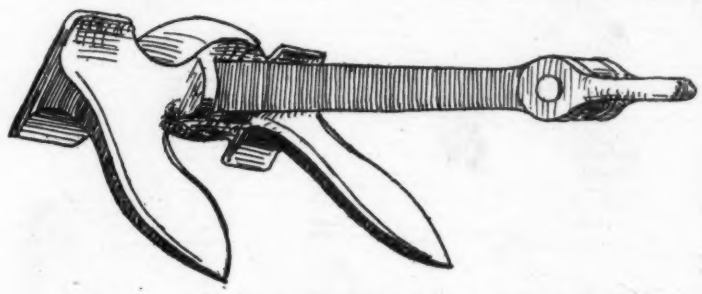
Have plenty of cable. For the ordinary cruiser, not less than 20 fathoms for each anchor (preferably 30), and in addition a good coil of heavy manila tucked away below will be found handy for emergencies, and may (whisper it!) even be useful for a tow line if your engine *should* break down. Here again, it pays to buy good stuff. When you buy manila, be sure you get what you pay for, and not sisal. Manila has a long fibre of considerable strength. Sisal is distinguished by its lighter color and by a shorter and weaker fibre. There is not a great deal of difference in price, and the better quality should always be bought. Manila is nicer to handle for a cable, but when the anchor is on soft bottom the fibres become soaked with mud and it is a nasty job to clean it.

The stream and sheet anchors should be provided with chain cable of the best quality. For a small boat a 3-B close-link chain, *tested,* is recommended. The chain cable should always be galvanized, as it may then be payed below as soon as it is washed off. Galvanizing reduces the strength slightly, but there should be ample strength even then if the chain is properly chosen. Manila cables must always be coiled on deck in large open coils to dry before stowing, otherwise they will rot.

There are various types of windlasses on the market, running from the simplest gypsy winch head to the elaborate pump brake pattern. The internal construction of all should be gone over to see that the shaft is of ample size and that there is plenty of bearing surface, that the parts fit together well, and, in general, that the whole apparatus is a workmanlike job. A convenient type has a "wildcat" for chain on one side, and the ordinary drum on the other. This drum should not be perfectly smooth in surface, but should be ribbed so that chain may be used on it if desired. These ribs, or chain whelps, should not be too large, and should have the corners rounded or the wear on the rope will be excessive.

When an anchor is too heavy to be picked up and tossed overboard it is necessary to use a releasing hook on a catfall for letting go. There are a number of types of releasing hooks in use, some of them elaborate and some quite plain. The hook is engaged in the balance ring on the shank of the anchor, the fall is then slacked away and a smart pull on the tripping line will release the anchor. The illustration shows a form simpler than most, and which I can testify works beautifully. In use the tripping line is made fast at the rail and the catfall slacked until the ring slides off the hook.

The whole subject of lights for small boats is an unsatisfactory one. You may go to a hardware store and buy an old barn lantern and walk along the beach with it in a gale of wind, swing



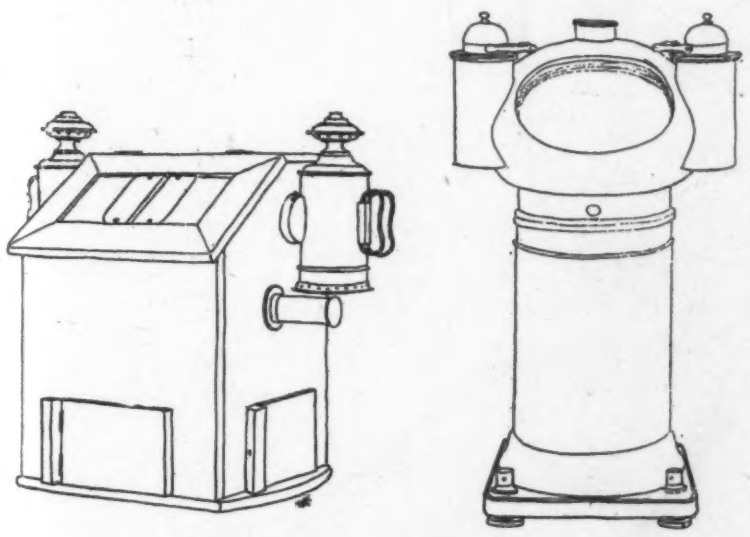
ONE OF THE MANY TYPES OF STOCKLESS ANCHORS WHERE BOTH FLUKES BITE THE BOTTOM

the lantern around your head and do everything except drop it overboard, and it will still burn without smoking. On the other hand, if there is any breeze, it is only with the greatest difficulty and the use of much profanity that running lights, anchor lights and binnacle lamps can be made to burn properly. If turned up at all they smoke the glass so that only a faint glimmer may be seen, or, if regulated to burn with a smokeless flame, they go out with the slightest puff of wind. The big ships seem to keep their lights burning in fair shape (yet the lookout keeps a watch on them and reports at every bell), but the average light used on motor craft or the smaller sailing yacht is an abomination. The best are electric, provided that you have a dynamo or a storage battery that is kept charged. I have seen binnacle lamps connected to a dry battery, but this was continually getting short circuited and there would be no light and often no spare battery when wanted. The neatest plan for using dry batteries is to have two sets of three cells each wired to the binnacle lamp through a double-throw switch. The switch must be kept open when the light is not in use. This permits one set to be used at a time, changing over to the reserve set when one is used up and replacing exhausted set at the earliest possible moment. Thus there is always a fresh set of cells in reserve. The batteries may be stowed below decks in a dry spot. Using the standard size cells gives a decent ampere-hour capacity and permits the installation of a six-volt lamp, a standard unit. Don't have the light too bright, just enough so that the card may be read easily.

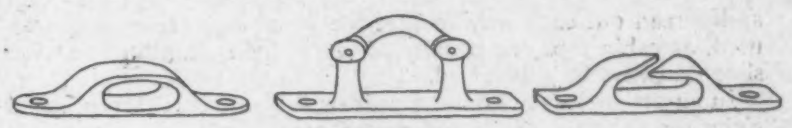
By all means have the glass of side lights and anchor lights of the Fresnal pattern and plenty large, even larger than the law requires. Be sure also that the side-light screens are long enough and that they are set parallel to the center line of the boat. It is well also to fit a cleat of wood on the forward end of the screen, so that the light may not show too far across the bow.

Deck fittings have been pretty well standardized and are in general well designed for the purpose intended, although there are on the market a number of fancy fittings that are not of real practical use. The object of the cleat, for instance, is to secure a line to. Yet, there are cleats which are too low and chocks which have sharp corners, so that the line has a "nip" around them. Chocks should be of ample strength, as they often endure considerable strain; yet how often do we see a heavy brass chock that will hold a three-inch line secured to the deck with two No. 8 screws, and the deck not reinforced under them.

Open chocks of special patterns are usually fitted near the stemhead, so that the bight of a line may be dropped into them quickly. The quarter chocks are better of the closed pattern, as they are used mostly for towing and do not allow the line to slip out. If the vessel has a bulwark, it is better to fit a proper mooring pipe in this, near midships, as then there is strength enough



COMPENSATING BOX BINNACLE AND BRASS BINNACLE ON STANDARD



REGULATION CLOSED CHOCK | CLOSED NIGGERHEAD CHOCK | SKENE BEVELLED CHOCK

to hold the chock when the line leads sharply up, as to a dock. In such a case the ordinary closed chock may be torn from its fastenings by the strain. Wooden bitts should be of clear locust, neatly rounded and with a stout bronze pin through them. It is well also to fit a brass cap to exclude moisture. If the bitt has no cap the constant strain will in time open up the fibers (especially if an oak bitt), with a result that water trickles down and the wood rots. Wooden bitts may be tapered below the deck to reduce weight. If cast bitts are fitted, they should be of ample strength, all corners well rounded and a good stout flange, with plenty of fastenings through it.

Hand rails are of as many types as there are builders. The rail around the vessel's side should be high enough to give some protection. The ordinary rail on a small boat is just about the right height to throw a man overboard in a seaway, although in many cases a heavy man would take rail and all with him, as the stanchions have nothing at the heel but a small pipe flange fastened to the deck with four little wood screws. These things, however, are really in the province of the builder or designer, though the owner should keep a watchful eye on them.

Sockets for the ensign and jack staffs may be light in pattern, but should have a small hole to form a scupper at the bottom of the pocket, otherwise, after a rain, the socket will be full of water and you will get a shower bath when you insert the staff.

Deck plates should be of heavy pattern and the key used with them, if any, should be secured nearby. The large deck plates (manhole plates) should always have a grating, so that ventilation may be secured without the chance of falling through the opening. A mahogany manhole plate, with brass rim and frame, makes a neat fitting. The handles for lifting should be made so that they can be gotten at without having to use a cold chisel or a marlinspike.

Ring bolts should be forged with a shoulder to take against the deck and a good solid shank fitted below decks with nut, washer and grummet.

Port lights are another item within the province of the builder. Some years ago all air ports were of heavy pattern and stood up well in service. Manufacturers then began cutting costs and cutting down the weight, with the result that their product deteriorated in quality. Air port frames would spring and break the glass, could not be kept tight in heavy weather, and were, in general, such a nuisance that the leading naval architects left them out wherever possible. One progressive firm decided to build an air port of *quality*, even though the price was considerably higher than for the ordinary type, and their farsightedness has been awarded by plenty of business.

Davits may now be procured made of a piece of pipe bent to shape, with a cap on the end to take the eye bolt for the block. They do not look shipshape, are so light that they spring out of shape as soon as any weight is put on them, and their only excuse is their cheapness. A proper davit should be forged with plenty of metal where the greatest strain comes and a neat taper both ways from this point. If the head is squared, with the corners chamfered off and a vertical hole drilled through it, a very neat rig is the result.

Davits should be of ample size, as the boats will often be hoisted when half full of water, and a springy davit is a nuisance. When stepped outboard the sockets may be of a piece of pipe made water tight at the bottom, let in through the deck with a flange for the fastenings at the deck line. Where davits are stepped alongside of a cabin trunk, a casting is fitted to take the heel and the davit is braced at the level of the cabin top. See that these braces have long straps running well back on the cabin top

and spread out each way so that the fastenings are well distributed, as cabin tops are usually of very light scantling. Davits should always be galvanized.

In an article in YACHTING a year or so ago, Mr. Warren Miller sighs for the days of the old centerboard windjammer, with the pump working in a square box on the after end of the trunk. The plunger was merely a stick with a bit of board and a piece of leather on the end, yet the pump was always primed and would cheerfully and promptly pump water, cigar butts, chips, bricks, ballast and beer bottles with equal facility. Nowadays, however, the ship chandler's salesman provides the owner with a little bit of brass pipe with a toy plunger in it and a length of rubber tube for a discharge, an inlet the size of a toothpick and an outlet as big as a match, that chokes up as quickly as the needle valve of the carburetor. The nearer we can get to the old type the better. One of the best is a copper barrel below the cockpit floor, piped to the lowest part of the bilge with a large diameter piping, and with a big basket strainer on the suction end. The old galvanized iron portable pumps will certainly pump, but they are most awkward to stow and use. Generally when you get the suction down to where you want it, the discharge deposits a stream of water inside the coaming and on your feet. A small rotary or plunger pump, direct driven from the engine (if there is one), is a very handy item of equipment, but it is usually small in capacity and must be carefully protected from dirt and chips.

Navigating equipment is most important for those who intend cruising. Of course, if your boating is to be confined to your own harbor and its vicinity the navigating tools may be few in number and of the simplest description, but in such cases when running through known waters you are not *navigating*, but *piloting*, which is a very different thing. Of course, it would be absurd to load down a 20-foot launch with all the equipment of a hundred footer, but at the same time every boat should have a compass, charts and a lead and line. The compass should be the best and largest that you could afford. The card should be at least 4 inches in diameter and the compass should be a liquid one. The cheap dry compass, as ordinarily built, is an abomination. It is never still, and if there is any sea on is apt to go round and round like a cat chasing its tail. Then, too, the pivot wears quickly, and the whole apparatus is generally cheaply made. These strictures, of course, do not apply to the superior types, such as the Sir William Thompson, as these are made with all the care possible and are in the same class with the best liquid compasses.

Have a good brass or mahogany binnacle and keep all iron or steel as far from it as possible. If going on a long cruise or into unknown waters, the deviation of the compass should certainly be found, and, if large, the compass should be compensated. Many look upon the compass adjuster's fee as daylight robbery, but you are paying for skill acquired by study and a good many years of experience, and it is a small item when regarded as insurance.

A hand lead and line should be provided for any boat—a seven-pound lead and ten fathoms of line for the small fry, and a fourteen-pound lead with a 20-fathom line for the larger cruiser. Learn the marks so that you know them without thinking, day or night, and learn to use them, too, so that you may not only heave the lead without expending one of your crew or a guest, but may get accurate soundings under way. The patent log is also a handy accessory, especially when making long runs in a fog, and gives a good check on position at any time when cruising in unknown waters.

As for life-saving equipment, such as life belts, ring buoys, etc., these will, of course, have to meet the Government requirements. At least one ring buoy should be hung in a canvas support within reach of the helmsman, so that it may be lifted out and tossed overboard in an instant.

The next article of this series will be entitled HIGH SPEED VERSUS IMPOSSIBLE CLAIMS. In it "Speed Bugs" will find much to enlighten them

MARCH From the *Yachting Monthly*.

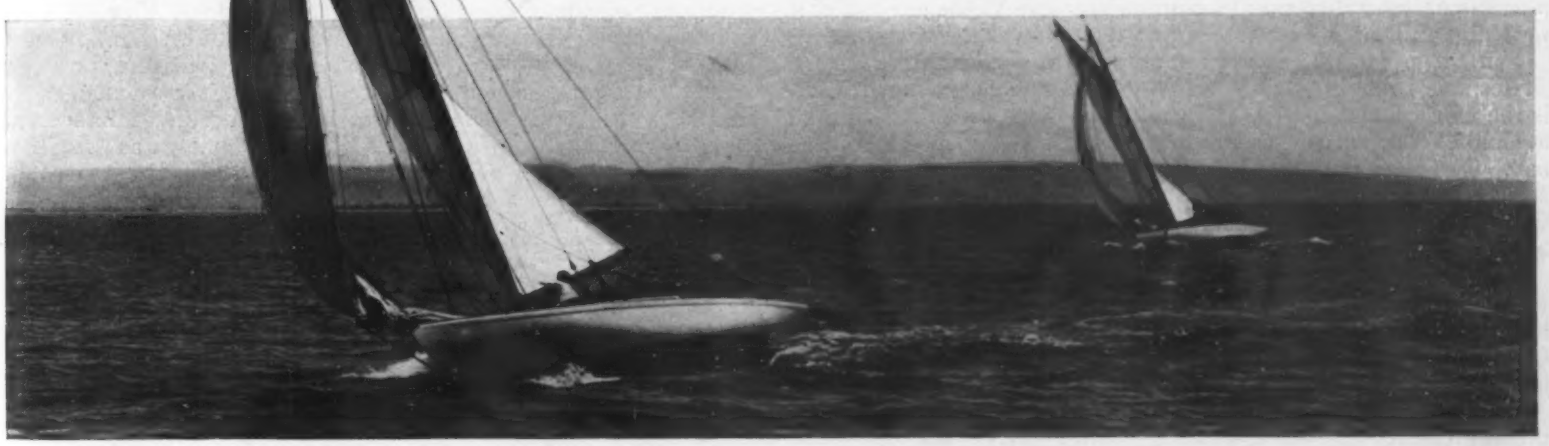
If you buy YACHTING from the news-stands be sure to order your next number in advance, otherwise you may not get it

Yachting in Southern California

By ROBERT ORDWAY FOOTE and HOLLOWAY G. SUMNER

Photographs by Harold A. Taylor and Others

TO many yachtsmen Southern California is merely the place from which starts the biennial California-Honolulu 2,400-mile ocean race, which has gotten to be a classic in the sailing events of the world. But the southern portion of the State which stretches along some 1,200 miles of the Pacific Coast of the United States, has other claims, less spectacular but none the less important, for high standing in the yachting world. Aside from offering one of the finest winter cruising grounds for short trips available to the boatmen of the West Coast, it is the home of many organized yacht clubs and is the scene of successive regattas for six months of the year, which bring out as fine boats of their class as are to be found anywhere in the world and require as good seamanship as do similar events elsewhere.



WASP, SOUTH COAST YACHT CLUB, LEADING IN THE TIMES CUP RACE

Properly speaking, Southern California, while holding many races and offering many cups to be sailed for, has no racing yachts. The racing machine has found little acceptance there, as inducements for all-the-year-round cruising are too great to tempt the yachtsmen to build boats which they can use a few times in the season. The real, outdoor joy of yachting is enjoyed nowhere to a greater extent or in more sensible style than there.

The largest yachting organization of Southern California is probably the South Coast Yacht Club, made up largely of business and professional men of Los Angeles and Pasadena. It has a beautiful clubhouse overlooking the outer harbor of San Pedro, the port of Los Angeles, and its boats are anchored under the protection of a large hill, where they are safe from all storms, yet in twenty minutes can be out at sea, as there is usually plenty of wind in the bay. The club has 150 members and 35 boats sail under its colors.

Another station of the South Coast Club is maintained at East Newport, thirty miles south of San Pedro, where there is a large still water lagoon. Twenty members of the club make their headquarters at this station, which is the objective point of frequent cruises from the main station at San Pedro. The main clubhouse of the South Coast organization is a three-story building, thoroughly equipped with everything that goes to make such a place home to the ocean lover. It has a dining room for the seating of the entire club membership, a ballroom where dances are held every Saturday night of the year and also has accommodations for putting up forty members.

Practically all the racing yachts of Southern California are sloops, with a racing measurement of from 15 to 38 feet, though there are a few yawls and schooners. On the open sea near Los Angeles the Universal Rule of measurement has been adopted, but at San Diego, the most active yachting center of Southern California, the Massachusetts Bay rule still governs.

Such yachts as are not used throughout the year are put in commission early in April and go out about the last of November. At San Diego, which has a land-locked harbor, most of the boats remain in commission throughout the year. An annual New Year's Day race is held there.

Fifteen cup races were sailed last season under the auspices of the South Coast Yacht Club and more will be sailed this season. The principal race of the year with this club is that for the Montgomery cup, a perpetual challenge trophy. This is an ocean race of eighty miles and its course is around Santa Catalina island, a magic isle of the Pacific, which lies twenty miles off the cost of California and is twenty-two miles long. The Montgomery Cup race of last year furnished one of the surprises of the season and demonstrated the equal footing upon which the shifting winds of the course put all boats. It was won by Myth, owned by H. W. Mellen, of the South Coast Club. Myth is a little sloop of only 15.8 feet racing measurement and was the smallest entry in the event.

Another important race held by this club is for the Commodore Hubbell cup, for the run from San Pedro to San Diego, a distance of 150 miles, which was won last season by Alert, South Coast Yacht Club, Logan and Bryan, owners. The Norlinger perpetual trophy race was also won by Alert, which likewise captured the Goodenow cup, Hyans cup, Eisen cup, Wright cup and took third prize in the arbitrary handicap race of its home club. The Alert made one of the most sensational records in 1913 ever known on the coast. She is a 30-foot sloop. Another sloop has been laid down this spring by Ben Weston, a member of the South Coast Yacht Club, which is designed especially to take a few of the Alert's honors.

In addition to winning the blue ribbon event of the South Coast Club the little Myth also won the Seward cup last season. Other cup winners were the Mischief, which took the Soiland cup for a race from San Pedro to Newport and fourth prize in the arbitrary handicap race; and Mischief II, which won the Suckow cup. The South Coast arbitrary handicap was won by Marie, with second prize going to Columbine, a new sloop of 37.8 feet owned

by A. G. Sepulveda, a member of the South Coast Yacht Club.

By all odds the yachting event which excited the most popular interest last season on the South Coast was the first "lady skipper" race ever held on the Pacific. This was sailed under South Coast Yacht Club auspices for the Van Valin cup. It was held on the open sea from outside San Pedro to the isthmus at Santa Catalina Island, a distance of twenty miles. The women handled their boats without advice or assistance from the male members of the crew. Although the boats encountered some rough weather, the women brought their commands into the little harbor at the isthmus without mishap. The winning boat was the Mischief, which finished with one reef in. She was sailed by Miss Lila Hubbell. The boat is owned by Commodore Charles E. W. Hubbell of the South Coast Yacht Club.

Another yachting organization in the vicinity of Los Angeles which is very active is the Sunset Yacht Club, which has a beautiful home on the waterfront at Long Beach, adjoining San Pedro. It was organized in 1910, and, while still a youthful club, has a number of sloops, yawls and ketches on its lists. It has 100 members. A three-day regatta is held in August every year off Long Beach in conjunction with the Los Angeles Motor Boat Club. A. J. Mitchell is commodore of the Sunset Club. Among the noted California sloops, formerly of other clubs, which now sail under Sunset colors, are Venus, Detroit, Mist and Minerva, and the fine 50-foot yawl Winsome.

The club has a fine harbor on a lagoon about three-quarters of a mile long by 400 feet wide, with an entrance to the sea 250 feet in width, and a depth of water of 20 feet all over the harbor.

San Diego Bay, the extreme southwestern harbor of the United States, has four yacht clubs, of which the San Diego Yacht Club is the oldest and largest. The Chula Vista Yacht Club is located at Chula Vista, ten miles south of the city of San Diego and on the bay. The Pacific Yacht Club is a smaller organization formed a few years ago by boys. It is rapidly growing in importance. The Coronado Yacht Club has its home at Coronado Beach, across the bay from San Diego.

The clubhouse of the San Diego Yacht Club, of which T. C. Hammond is commodore, is unique in its way. It is an old ferry boat, which was used for years in the run from San Diego to Coronado and was finally purchased by the club and converted into one of the most comfortable yachting homes in America.

Santa Barbara is also the scene of yacht racing in summer, though most of the boats which compete come from the clubs about San Diego and Los Angeles. Not merely do these boats go to Santa Barbara for the purpose of racing for the handsome cups offered by the Santa Barbara Yacht Club, but also to enjoy one of the long club cruises for which the Southern California waters are noted. Occasionally the fleets of the southern clubs sail farther north to San Francisco to join in the Bay races there, but generally they prefer their own waters to the fog-hung north.

Probably the most famous yacht on the Pacific Coast is the Lurline, three times winner of the California-Honolulu race of 2,400 miles. The Lurline is a clipper-built schooner and a magnificent sea boat in which her skippers always have the utmost confidence. She is 84 feet over all, with a water line length of 73 feet and a beam of 21 feet 3 inches. The boat was designed and built at San Francisco in 1883 by Matthew Turner for John D. Spreckles. In her thirty years of life the Lurline has had but four owners.

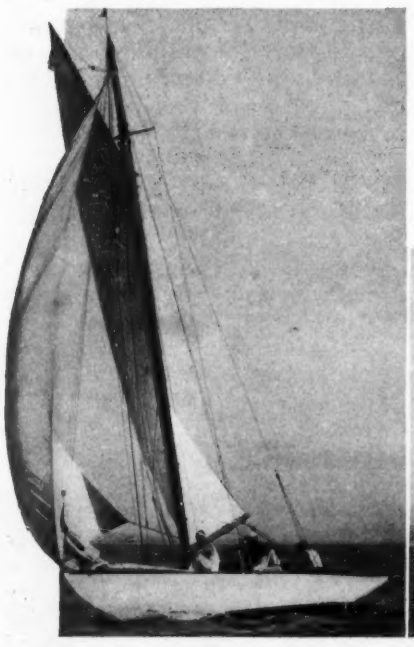
In her first two Honolulu races Lurline carried the pennant of the South Coast Yacht Club. In 1912, sailing as a San Diego Yacht Club boat, she again won the long race, sailing against Seafarer, San Francisco Yacht Club; Hawaii, Hawaiian Yacht Club; and Nattose, Royal Victoria Yacht Club. The winner's time in this race was 13 days and 17 hours.

As in most parts of the country, there is a tendency in Southern California to discount the racing game and give more time to pleasure sailing and cruising. Small sailing craft in the hands of boys of 15 to 21 years of age are developing the material from which most of the yachting enthusiasts of the section are coming, and these boys seem to prefer cruising to racing. There has been much more interest in yachting all along the coast in the past year than has ever been noted before.

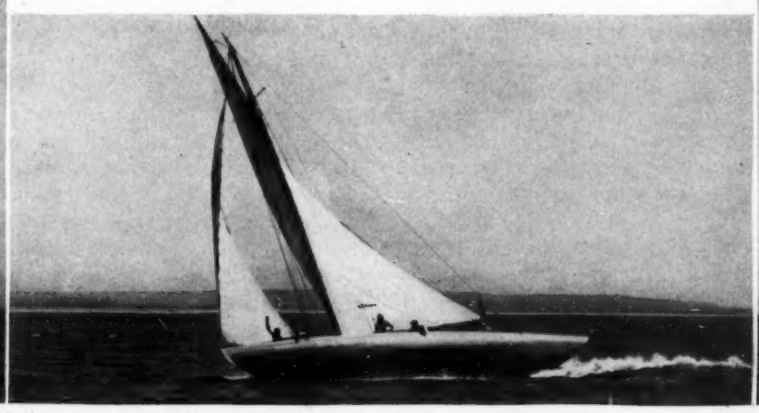
A glance at the straight coast line of Southern California as it appears on the chart will show that it does not offer the same inducements to cruising as do the waters of the Atlantic Coast, the Great Lakes, the Gulf of Mexico and Florida Keys, or Puget Sound and San Francisco Bay. However, the yachtsmen of Southern California have near at hand a group of interesting islands lying not far off the coast. They are known as the Channel Islands. There are about twenty of them altogether and they include Santa Catalina Island, famous the world over as a winter resort and as the only place where tuna fishing with rod and reel is to be had.

The islands are in three distinct groups. Those known as the Santa Barbara Islands lie off the coast of the town of that name. The three largest are San Miguel, Santa Rosa and Santa Cruz. Farther to the south are the Santa Catalina Islands, which include the one giving them their name and Santa Barbara and San Clemente. Farther out at sea lies windswept San Nichols. About 100 miles to the south are the Coronado Islands, a rocky group lying off San Diego.

The Channel Islands were discovered by Juan Rodriguez Cabrillo, a Portuguese navigator in the employ of Spain, in 1542, and on San Miguel Island the ancient mariner lies buried. They were rediscovered by the Spaniard Viscaino just sixty years later. When first visited most of the islands were

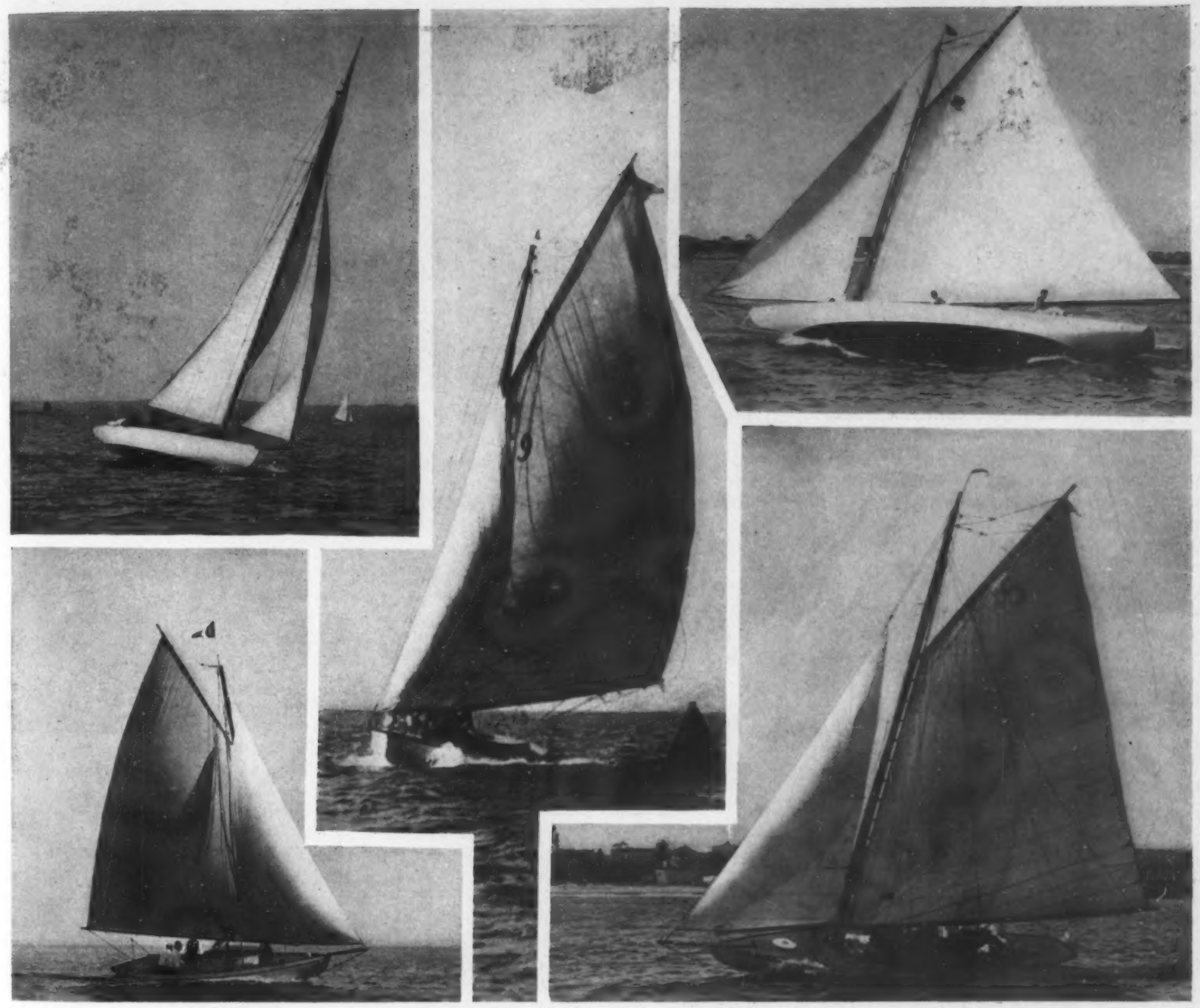


ALERT, WINNER OF THE SAN PEDRO-SAN DIEGO OCEAN RACE



COLUMBINE, A FAST SOUTH COAST YACHT CLUB SLOOP

MISCHIEF, FAMOUS OLD CALIFORNIA SLOOP



SEABIRD
LEHUA
SOME SAN DIEGO YACHTS
BIRD
AEOLUS
GRETCHEN

thickly populated, but the people were transferred to the mainland during the regime of the California missions and, except for a few ranchers, sheep herders and fishermen, all the islands except Santa Catalina are uninhabited at the present time.

Santa Catalina Island is twenty-two miles long and contains 50,000 acres. Except for two resort towns on its eastern or landward side, it is one vast sheep ranch. Avalon, the harbor of the island, is the home of the Tuna Club, the members of which catch fish weighing several hundred pounds with rod and reel. The tuna is the gamest fish in the world. They have been taken up to 250 pounds in weight in the Catalina waters with sixteen-ounce rods and lines of not more than twenty-four threads. Catching a tuna weighing over 100 pounds with this tackle entitles one to membership in the club and to wear its button.

All these islands are favorite objective points for Southern California yachtsmen. They have but few harbors, but these few are frequented throughout the year by amateur sailors on fishing or hunting trips. The wild goats and boars on some of the islands afford fine sport. Among the fixed cruises taken every year by the South Coast Yacht Club are the Decoration Day run to the Isthmus of Santa Catalina, and a Labor Day "stag" cruise of three days to the Santa Barbara group. But generally the boats go individually rather than in fleets, most of the club cruises being to the neighboring clubs to participate in regattas. Santa Cruz Island is the favorite for a long trip. It is heavily wooded for a California Island and there are still a number of good, small harbors on the north side which afford safe and quiet anchorage.

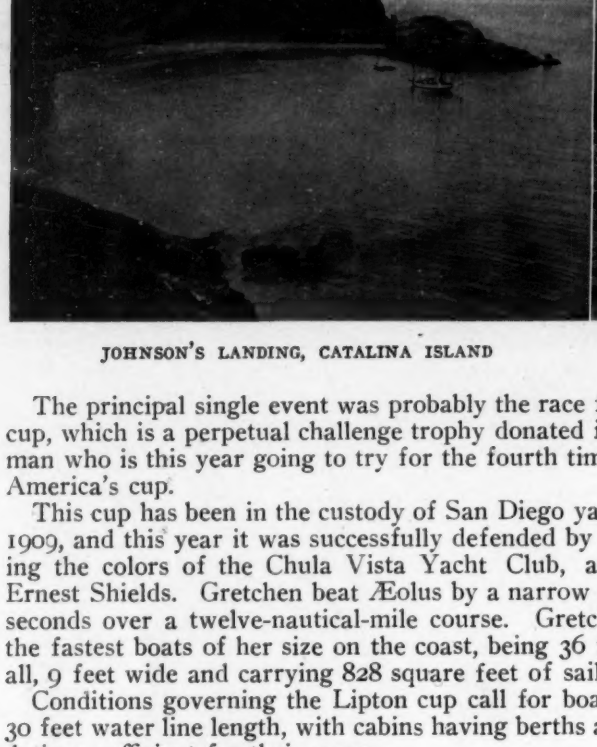
Deprived though he be of inland waters, the yachtsman of Southern California has the compensation of having the only sailing ground off the coasts of the United States proper, which is smoother, between storms, in winter than in summer. Winter sailing is considered more pleasant than summer and it is only because most of the yachtsmen are more engrossed with their business at that time that the racing events are not held during that season.

With the San Diego Bay Yacht Clubs

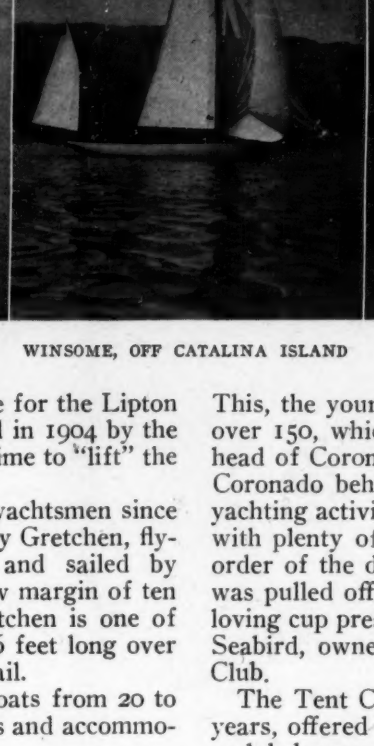
By Holloway G. Sumner

The principal event on San Diego Bay, at the extreme southern end of California's coast line, last year was the Regatta Week of the Southern California Yacht Racing Association, held July 19 to 26. A good-sized fleet from the clubs in the neighborhood of San Pedro came to San Diego for the event and took part in the racing for the cups put up by the more southern clubs. The program for the week was as follows:

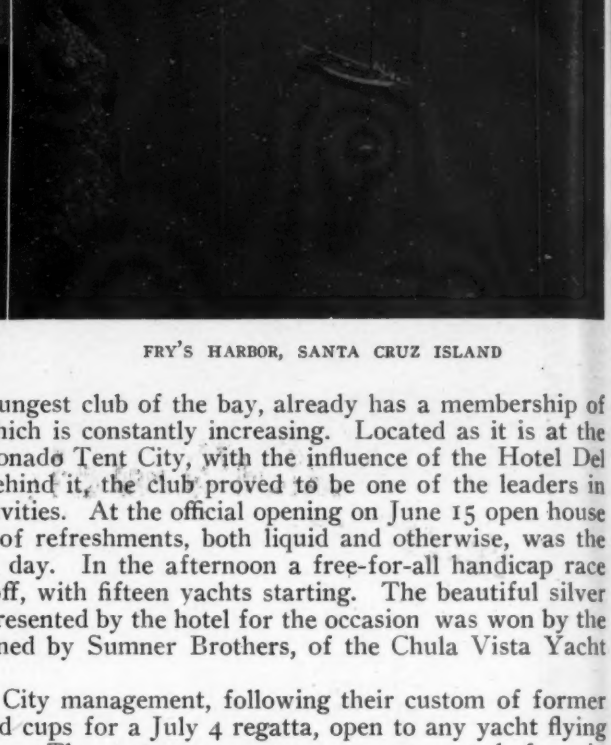
July 19.—Welcome cruise to meet Northern yachts.
July 20.—San Diego—1915—Exposition Gold Cup.
July 21.—Lipton Cup and ball at Hotel Del Coronado,
July 22.—Hotel Del Coronado Cup and Moonlight Regatta.
July 23.—Los Angeles Times Cup and land cruise in autos.
July 24.—Races for all classes for various cups.
July 25.—Commodore J. J. Hernan Cup and smoker at San Diego Yacht Club.
July 26.—Race from San Diego to San Pedro.



JOHNSON'S LANDING, CATALINA ISLAND



WINSOME, OFF CATALINA ISLAND



FRY'S HARBOR, SANTA CRUZ ISLAND

The principal single event was probably the race for the Lipton cup, which is a perpetual challenge trophy donated in 1904 by the man who is this year going to try for the fourth time to "lift" the America's cup.

This cup has been in the custody of San Diego yachtsmen since 1909, and this year it was successfully defended by Gretchen, flying the colors of the Chula Vista Yacht Club, and sailed by Ernest Shields. Gretchen beat Æolus by a narrow margin of ten seconds over a twelve-nautical-mile course. Gretchen is one of the fastest boats of her size on the coast, being 36 feet long over all, 9 feet wide and carrying 828 square feet of sail.

Conditions governing the Lipton cup call for boats from 20 to 30 feet water line length, with cabins having berths and accommodations sufficient for their crew.

The other races which went to the San Diego yachtsmen were those for the San Diego 1915 Exposition Gold Cup, which was won by Æolus, of the San Diego Yacht Club, and the handicap race for the Hernan cup, which was won by Lehua, the smallest boat in the fleet that took part in the race.

The crew of the Columbine, flying the colors of the South Coast Yacht Club, were just aching for a heavy wind to show the San Diego boys what a real yacht race is like. On the day of the Hotel Cup Race their wish was fulfilled. It certainly blew, and the Columbine certainly flew. The old Pacific—this time belieing its peaceful name—kicked up a nasty sea that bothered the little boats, but the big northern boat was just in her element. The Columbine took the lead at the crack of the gun, gradually increasing it until she romped across the line an easy winner.

Great was the enthusiasm among the San Pedro yachtsmen when the little Wasp succeeded in defeating all of her major rivals and captured the Los Angeles *Times* cup. For several years past it has been the northerners' persistent endeavor to carry this cup back with them to its original home.

San Diego yachtsmen were glad to be given an opportunity to repay their guests from the north for their cordial hospitality of former years. This regatta tended to strengthen the good will and friendship between the two branches of the yachting association.

An event of importance to yachting on San Diego Bay was the organization and opening of the Coronado Yacht Club last spring. This, the youngest club of the bay, already has a membership of over 150, which is constantly increasing. Located as it is at the head of Coronado Tent City, with the influence of the Hotel Del Coronado behind it, the club proved to be one of the leaders in yachting activities. At the official opening on June 15 open house with plenty of refreshments, both liquid and otherwise, was the order of the day. In the afternoon a free-for-all handicap race was pulled off, with fifteen yachts starting. The beautiful silver loving cup presented by the hotel for the occasion was won by the Seabird, owned by Sumner Brothers, of the Chula Vista Yacht Club.

The Tent City management, following their custom of former years, offered cups for a July 4 regatta, open to any yacht flying a club burgee. The past season cups were presented for six classes, two to each class, with an extra cup to the class having the largest number of starters. None of the classes had less than six entries and one as many as fifteen.

The big event of the Chula Vista Yacht Club was the series of five races for the magnificent cup donated by B. F. Cheney, of Boston, Mass., to be contested for by the fleet of fifteen "one-designers," the pride of the club. This cup furnished some of the keenest racing seen on the bay, being finally won by Seabird.

Another event which aroused much enthusiasm and brought out the racing spirit to its fullest extent was the race for the John D. Spreckels cup, for yachts not exceeding thirty feet overall length. A spirited contest resulted in the Chula Vista Yacht Club's entry, Bird, owned by Roger Bros., showing her superiority over her competitors and winning this trophy.

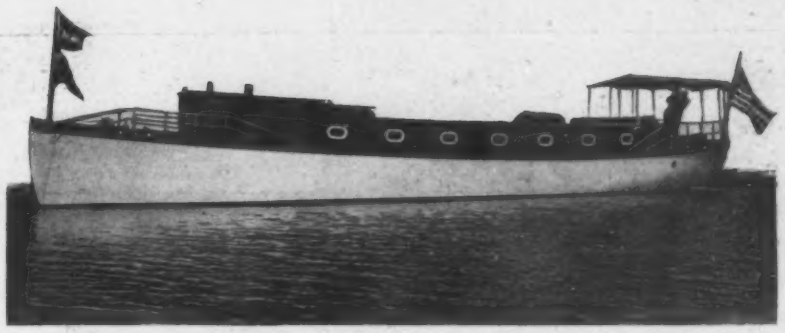
The members of the Chula Vista Yacht Club have every reason to view with pride the showing made by their club during 1913. An examination of the records shows that without exception where they were represented in every race one of their entries has taken first place.

Yachtsmen of this vicinity consider themselves fortunate to be favored with a twelve months' yachting season; and while they are busily engaged in "potleading" their boats prior to the inter-club race held annually on San Diego Bay, on the occasion of Washington's birthday, February 22, their Eastern brothers are likely to be found reading YACHTING in close proximity to the fire, endeavoring to keep warm.

The Wanderings of Min-Mo Under the Southern Cross

By T. C. MORRIS

Part IV—From Trinidad to Maracaibo



MIN-MO

ONE Monday at 3 o'clock we bade farewell to Port of Spain, bound to Maracaibo, some 800 miles to the westward. There was quite a crowd on St. Vincent's jetty to see us off, and the betting was odds on that we would never reach our destination in Min-Mo. At 5 o'clock we entered the Grand Bocas, or Dragon's Mouth, where, as usual, the strong trades were blowing in, and when we passed through and got the ocean swell it was a big one, and I wished I could turn back. My engineer, who had been through the Bocas a number of times on much larger boats, said it was pretty bad, but I concluded as long as we could keep the water *out* we were doing all right.

Just at sundown we turned Punta Penas, the extreme eastern point of Venezuela, and put the boat on her course for Margarita Island, W. ¼ N., distance 130 miles. Darkness fell, with its usual tropical suddenness, and in the sickly lights of our lamps and side lights the foaming seas assumed gigantic proportions and took on a sinister aspect.

Both of my Venezuelan seamen had been ashore all the morning, and were considerably the worse for rum. I had the wheel myself for a long time, and made them stand their watches, but I could not trust them for five minutes. I caught the lookout asleep half a dozen times, so, when I saw a vessel's light ahead without being reported, and found the fellow dozing again, I shook him up pretty roughly.

During the night several schools of porpoises came to visit with us and played around under the bow. I could see them quite distinctly outlined in a phosphoric glow; once one jumped out of the water just under my arm as I leaned over the bow rail, giving me quite a start.

At clear daylight we sighted Margarita right ahead and just where it should be, showing my calculations were correct. We ran on, and rounded close under the shoulder of a rocky hill, against which the long, rolling waves of the deep, blue Caribbean were dashing themselves and spouting in clouds of feathery foam, scintillating brilliantly in the dazzling rays of the rising sun. The town of Pampator lay before us in a small bay. There were a number of small pearl fishing boats at anchor, and a "tin pot" warship, so I ran up near the latter and anchored, 148 miles from Port of Spain.

The harbor master at once pulled out, asked for my papers, and took them ashore. The steward started breakfast, and I took a shave and bath, having been up all night. In a short time, out came the boat again, full of men, with an urgent request that I go ashore at once. So I ate some breakfast hurriedly, and went ashore. The little dock was crowded with men, who eyed me with great curiosity and followed me up to the Government house, where I was marched up-stairs, and met the Aduana, or custom house collector, the deputy and about all the male population. They jabbered away most excitedly, but I could not get what they were saying, so asked for an interpreter. The young man I had brought ashore with me, and who spoke a little English, was so scared he forgot what little he knew, and sat in a corner looking exactly like a dog caught killing sheep. I thought we would probably be shot in the course of an hour.

Presently, however, the agent of the Royal Mail arrived; a nice young fellow named Sifontes. He spoke pretty good U. S., and through him I found that I had no business stopping at Pampator, as my clearance was for La Guaira, through an error in making out the papers. So I was to be indefinitely detained until they could hear from Caracas, and they drew up a lot of legal documents, presenting my case as a flagrant violation of the law. I slipped off a cable to Caracas myself, and told them that when the Minister there heard of the detaining of my boat on a technicality they would get "what for." They finally agreed to allow me to go to Caracas myself next day on the Berbice, and sent out a soldier or two aboard the Min-Mo. No one was to be allowed ashore, and the "tin pot" armed her watch and got her guns ready.

Next day I boarded the Berbice, and reached La Guaira the following morning; then up to Caracas over the most wonderful railway, winding around through the mountains. Here I met Mr. Proctor, the general manager of my company, who told me everything had been arranged, and the Government had cabled to have me released at once, *pronto!* just as I had told the "cussed" grafters.

I stayed in Caracas until Saturday, when I went down and joined the Berbice, and sailed again for Pampator, which we reached early Sunday morning. I marched up to the Aduana, head up and tail over the dash, and they bowed and scraped, re-

WE BADE FAREWELL TO PORT OF SPAIN

I RAN OVER TO A NUMBER OF SMALL PEARL FISHING BOATS AT ANCHOR

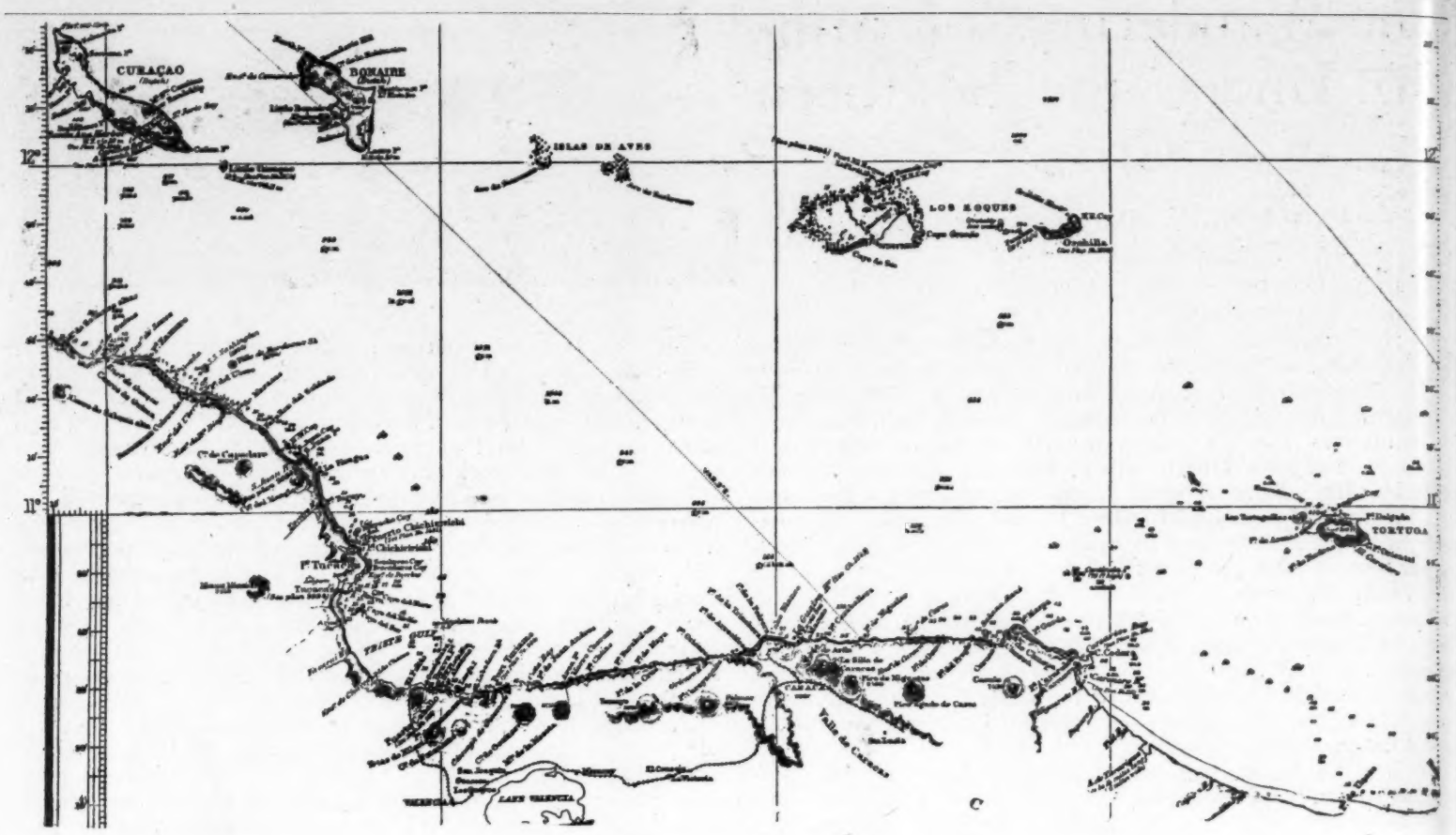


CHART OF THE VENEZUELAN COAST FROM TORTUGA TO CURACAO

gretted the necessity, etc., and handed me a bill for $4 for services of interpreter. As they had figured on fining me $500 and confiscating the Min-Mo, doubtless they were badly disappointed.

My papers were given back to me, and I intended to have sailed that afternoon, but Sifontes came out and asked me to take a party of ladies out for a run, and, as he had been so nice, I postponed my departure, and told them to be on board at 3 o'clock. With the usual disregard of time in Venezuela, they did not show up until five. There were two large boat-loads when they did come, and by that time it was pretty rough outside, so about the third plunge, Sifontes rushed forward, saying they were all getting sick and please to turn back. I did so, and, on anchoring, served cocoa and cakes, and they invited me ashore to a dance that night. I went, and saw how they did things, but I could not dance to their music, and came off again at 10 o'clock.

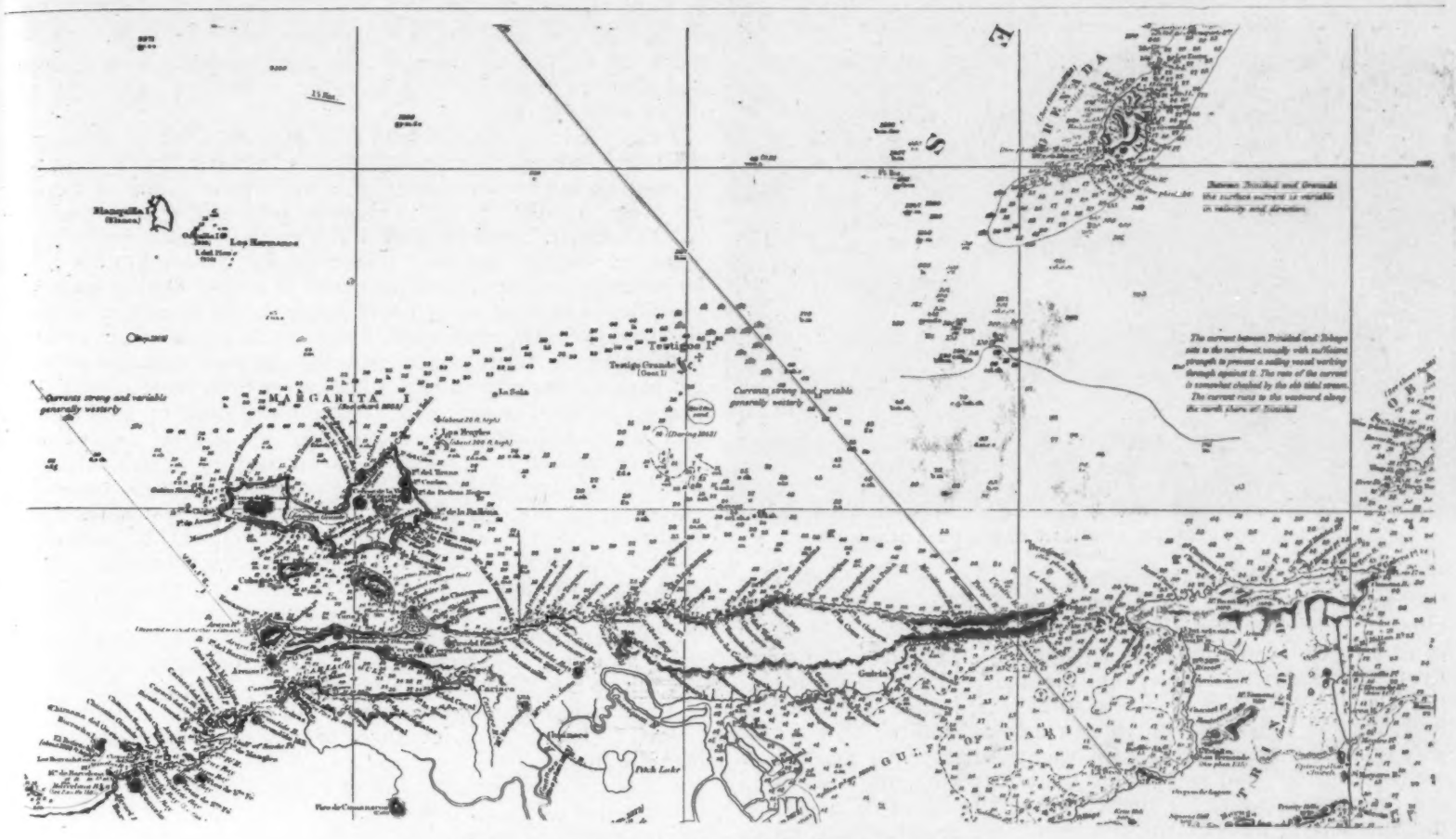
Next morning we slipped out at seven, and just at sundown picked up Tortuga Island, where I got a cross bearing to check my course, and found I was right. From there I steered S. 83 degrees W. for La Guaira, distance 98 miles; we had already come 100 miles since leaving Pampator, and I hoped to get through the dangerous reef inside of Centinalla rocks before the moon set, figuring to pass that point at 11:30 P. M. However, at 11 o'clock a black, squally looking cloud covered up everything, and rain fell in torrents. The wind shifted and blew very hard, making a nasty cross sea, in which it was difficult to steer.

I was anxious and worried: my men were not very good on steering by compass, and I knew if they got her off her course and touched the rocks no one would ever know what became of us, so I spent two very horrible hours. It was impossible to see anything for the flying spray, and the moon had gone; but I had things properly figured, for we never saw the rocks, and when day broke we were headed up the coast along the foot of the mountains with the buildings of La Guaira shining in the distance. At 9:20 A. M. we ran in behind the breakwater and let go the anchor, exceedingly glad to be there. The company's agent came off, and I sent in my papers to the custom house; then we all had something to eat, as it had been too rough before to light the galley fire, and all hands took a nap.

Soon after arriving, the harbor pilot appeared, and suggested taking me a couple of hundred feet further in, and mooring the boat, instead of anchoring. As we were rolling considerably, I thought this was a good proposition, and got my anchor. The pilot started to back, and let the wheel spin so fast that the sudden jerk parted the backing chain, and both tiller ropes jumped off the quadrant. I stopped the engine, got out the tiller, and steered in to the mooring buoy. Meantime the pilot in the wheel house was having lots of fun pulling bells, but the engineer, who could see me and was watching my hand signals, paid no attention to him at all, so I put the boat in myself. Later the pilot came aboard with a bill for 84 bolivars, or $17. I sent him up to the agent, who in the end was obliged to pay him. More graft, that's all.

Next day I went up on the early train to Caracas, where the climate is delightfully cool, and transacted my business at the office. I stayed in the city a couple of days and saw most of the sights. It is very distinctly Spanish; narrow streets for the most part, with the windows of all the houses barred like a prison, though the residences all have *patios* inside full of flowers, plants, etc. Friends passing along the sidewalk in the evening stop to chat, and I believe most of the love making is done that way. Comparatively few Venezuelan women are seen walking on the streets—nothing like the crowds of shoppers one sees at home. I don't know when they go out for exercise; there is some driving done in the afternoon, and I saw two or three very handsome women.

Leaving Caracas on a Saturday morning, I joined the boat at 11 o'clock, and expected to sail at 2:30 for Curacao. For some reason, it is necessary at La Guaira to drop an anchor, even if a vessel is moored to the breakwater, and I had let mine go; but now, when I tried to get it, it would not come up. I tried everything I knew, but without starting it. Presently a seaman on a schooner near by asked how deep the water was. I told him 4½ fathoms, on which he pulled off his shirt, plunged over, and, swimming up, asked what I would give to get my anchor clear. I said: "Two bolivars," so he pulled himself down, hand over hand, and, coming up, said the anchor was fouled in the mooring chain of the buoy. I gave plenty of slack, and down he went


MARGARITA I.
Testigos I.
Testigo Grande
Currents strong and variable generally westerly
Currents strong and variable generally westerly
Between Trinidad and Grenada the surface current is variable in velocity and direction.
The current between Trinidad and Tobago sets to the northwest usually with sufficient strength to prevent a sailing vessel working through against it. The rate of the current is somewhat checked by the ebb tidal stream. The current runs to the westward along the north shore of Trinidad
Pitch Lake
GULF OF PARIA

FROM TRINIDAD TO MARGARITA, OR THE ISLE OF PEARLS

again, and cleared it very cleverly. It seems he was a pearl diver from Margarita, and a little matter of 25 feet or so was nothing to him.

At 3 o'clock we got clear, and started off for Curaçao, course N. 53 degrees W., distance 144 miles. We had a fine night's run, nothing but a long heave to the sea, a moon for most of the night, and the wind astern. Eternal vigilance is the price of safety, and, though the sea was apparently deserted, I was, as is my custom, walking all around the boat, and, on coming on deck from a visit to the engine room, where I had stopped to light my pipe, suddenly saw a red light close aboard on the starboard bow. To dash into the wheel-house took but a second, but in that second the vessel, a small schooner, had come up into the wind, and we passed each other not over 50 yards apart, while I was grinding the wheel hard over. Had she not gotten out of our way my Venezuelan wheelman would have run her down, as, having been given the course, he was holding it, and the lookout "risked it," and did not report the light.

Daylight showed land on the starboard bow, which one of my seamen declared to be the high hills of Curaçao. There was nothing in sight ahead of us, and I could not understand why the land should show first to the right, especially as I figured we should have at least 35 miles to run. However, the man insisted it *was* Curaçao; that he had been there many times, and knew the shape of the mountains, so I concluded there must have been a strong current in our favor and that I had made an error in my figures. I gave her a slant in for the land, but the nearer we got, the less it looked to me like what I expected. Several vessels were lying anchored in front of a town, and there were the masts of a wireless station, but it didn't look right. I think the man was also beginning to have his doubts. We ran in and up to a small wharf, where I found out it was the island of Buen Ayre and the town of Kralendyke. I had to show my papers, of course, and by the time we'd had breakfast and the Dutch papers made out (these islands belong to Holland) it was too late to run on to Curaçao that night.

Next morning we left for Curaçao at 6:15; course W. S. W., to Little Curaçao, a very low island. We intended passing between it and Curacao, and about 9 ran through the passage, and from there followed the shore line about half a mile out. We met the S. S. Merida here, and at 11:45 slowed down to pass into the beautiful harbor of Willemsted. Turning into the narrow entrance, flanked on either side by a grim stone fort, against whose walls the waves are always breaking, I saw the famous bridge of boats, and blew for the draw, but, as they were slow in getting it open, I had to stop. Then off came the pilot in a devil of a hurry, and, the bridge swinging, we went through and along side a wharf, or really, the bulkhead of the street. The arrival of the Min-Mo was entirely unexpected; in fact, she had not even been signaled from the station, and I was inside the fort before they knew anything. Luckily, they were Dutch, and not the excitable Venezuelans, so we were not shot to bits.

A large crowd soon assembled on the street, and I had to put a guard to keep the people off the boat. I sent in my papers and called on the American Consul, a Mr. Cheney, from New Hampshire; on the Venezuelan Consul, and H. P. DeVries, agent for the Royal Dutch mail. The latter gentleman showed me the greatest attention and courtesy; put me up at the Club and detailed a man to show me the shops, etc.

Curaçao is one of the most interesting places I have ever visited; very distinctly Dutch, looking like a bit of Holland dropped down into the tropics. There are excellent shops of all kinds, and Black and White whiskey, 70 cents per bottle. The streets are fine, except where they are paved; there they are very rough. There is a gasolene tram-car service and about 25 autos and 2 motor-cycles.

We stayed here for several days, filling tanks with water and gasolene and arranging for a pilot to take us over the Maracaibo Bar, as that place is the one bad *bad* bit of navigation. I had it persistently dinned into me from the start that, that would be the final test of the little boat, and the nearer I got to it the worse I was scared. Finally, a man came aboard who for years had been running on the Red D steamer Merida into Maracaibo. I saw Captain Johnson, of the steamer, and several other men, all of whom recommended him very highly, so I engaged him for $15 to pilot me, first to Aruba, thence to Maracaibo.

THE LOW-LYING SOUTH AMERICAN COAST NEAR MARACAIBO

On Friday morning at 7 o'clock I cast off my lines, blew for the draw, and started for Aruba; course W. x N., distance 76 miles. Sighted land at 12:45 P. M., and at 2 o'clock had closed in enough to see the breakers hammering on the reef, the spray flying sometimes thirty feet into the air. All the south side of the island is defended by a low coral reef, inside of which is a long, narrow lagoon. Soon we saw a town, and the pilot said it was Orangested, and the lagoon was the harbor. I asked how we could get in, and he told me there was a narrow opening in the reef just opposite the town. I was suspicious of this, as it did not tally at all with my judgment; but my chart was on so small a scale that there was nothing on it to show an opening, or even the reef, for that matter.

Presently the pilot said: "Captain, there is the entrance," and turned the boat in towards a break in the visible reef. Suddenly a big wave broke over the reef at the point for which we were headed, and, as it receded, I saw the tops of rocks sticking up. By this time we were within less than 100 yards, and I simply *fell* into the wheel-house, shoved the pilot away from the wheel and twisted her off just in time to prevent being knocked into tooth-picks. Then I turned my attention to Mr. Pilot, after giving the wheel to one of my men. Had he not been an old man I think I would have brained him; but I "burned" him good and plenty with my remarks, and proceeded to hunt for the opening myself.

He still vowed it was the harbor, but had made a *mistake* in the opening; so, after running back and forth once or twice, I saw, further along, what really looked like a deep gap. The old man said we could not go through there, but from certain signs I thought differently, and put the boat into it. In a moment we were safe inside, and ran in to where some boats were anchored to find out just exactly where we were. We found we were in front of a small fishing village, and still six miles from Orangested, which was out of sight around the shoulder of a hill. I procured a fisherman to carry us to the *real* harbor, agreeing to pay him $1 and keep him over night, and started off again. In less than an hour we were tied up at the jetty at Orangested. I had a good mind to set the old ass of a pilot ashore here, but he said he had not been to Aruba for 27 years, though he knew the Baja Seca (Maracaibo Bar) as well as he knew his own yard; so I thought I would give him another chance.

To arrive on the bar in daylight it would be necessary to sail from Aruba about 4 P. M., so we remained there until the next afternoon. The town is just like Buen Ayre, and I met an equally nice lot of people. Everybody was interested in the boat, as she was the first of her size and type to attempt such a trip. The following day at 5:30 P. M. we cast off our lines, and, amidst a chorus of cheers and good wishes, started on the last leg of our trip; course to Baja Seca reef, S. W. ¾ W., distance 131 miles. A very heavy, quartering sea was running, and a fresh breeze made the waves "cap" more or less, but Min-Mo is some sea boat, and she lifted prettily just in time, so nothing came over the decks except spray.

I expected to sight the land at San Carlos Island about 9:30 the next morning, figuring on 8½ miles an hour, but at 6:30 land showed abeam on the starboard side, just for a minute through the haze. I called the pilot's attention to it, and he said it was the "Indian Coast," and we were miles off our course to the westward. I did not see how this could be, as every time I had looked at the compass the boat was as nearly on her course as possible. The man could not give me the name of any point of the land we saw, and when I showed him the chart he knew nothing about it, but kept on vowing we must haul due south to get back on our course. As I had never been there before, I let him set his own course, and, after running until 11:30, by which time we should have more than passed in by San Carlos, and all the time hauling more easterly, we picked up a high hill. The weather was hazy ashore and the water had changed color, but, on seeing the hill, the old man declared it was just back of San Carlos.

At 1 o'clock we sighted a low sand spit right ahead, and the pilot began looking for the entrance. One of my seamen told me he had often been to Maracaibo on sailing vessels, and confirmed the pilot's course. So there I was, with two men saying we were going all right, while my own senses were declaring them wrong. We ran up and down this sand-bank for an hour and a half in one of the heaviest seas I have ever had the boat in; many of them I judged to be 15 to 18 feet high, but she rode them like the sea bird she is.

Finally, my two experts, failing to find the entrance, disagreed. One insisted we go further north; the other, that we were already too far north. The only land-mark was the same hill, only faintly seen in the haze. The chart did not show any hills near San Carlos, but did show a hill called the Mesas of Borojo, which is fully 50 miles back from the coast and many miles east of San Carlos; so, taking a chance, I got a compass bearing and decided we were still 47 miles east of San Carlos. I took one of my men into the wheel-house, sent the old pilot away, and set a course W. x S. The old man declared we would get lost going in that direction; that there was nothing there, and that we would never get out, to all of which I turned a deaf ear, for I was good and mad by this time, and determined to do my own navigating in future.

At 5 o'clock I opened a gap in the coast, through which showed a cluster of buildings, a stone fort and a barkentine at anchor. I asked the old man what place it was, but he did not know; had never seen it before, neither had my noble Venezuelan seaman.

"Well," said I, with what I intended to be biting sarcasm, "that is San Carlos and that is the Baja Seca reef. I want you to know them, as they should be old friends of yours."

NOTHING BUT A LONG HEAVE TO THE SEA

However, it did not do any good; they were too rattled to know anything. Ahead of us were the masts of a vessel sticking up, evidently a three-masted schooner, and I asked the pilot if we should go beyond her to find the entrance. He took a look and said: "Oh! no, Captain, that is the harbor, and she's at anchor."

"At anchor," I bawled furiously; "why you several and distinctive sorts of—etc., etc.—can't you see she is a wreck, and on the reef?"

He blinked, and muttered something to the effect that his eyes were not as good as they used to be. We passed the wreck, and I again went up on the cabin roof to study the situation, and didn't notice he had gone into the wheel-house, as I had the glasses up to my eyes, when I felt the boat give a most peculiar swing, and, turning, saw a big wave curling and flattening as they do just before breaking. Again I fell into the wheel-house, reaching for the wheel with one hand and the bell-pull with the other, and, luckily, in time to ease her over that wave, which broke just to leeward of us. More seas followed, but I had her headed *out* by this time, and the lead gave us 2½ fathoms. Had that wave broken on us we would probably have been rolled right over and foundered, yet my *practico* didn't even know we were in shoal water.

Then I got out an American yacht ensign and made a signal for a pilot. In response, we soon saw a small sloop coming out inside the reef to meet us. The fort fired a gun, I set the Venezuelan flag, and shortly afterwards found what looked like the end of the reef, though there was no buoy to mark it. I kept sounding, of course, trying to find the best water, but there were so many whitecaps showing, it was very hard to tell just where to go. So I laid off and on, waiting for the sloop, while the old man was trying to see the channel that he had been through a hundred times, and pointed out a place "where all the ships go in" close to a short sand spit, on which, of course, the sea was breaking. I ran in closer to investigate, but the lead told me the water was too shoal for any vessel, and presently a big wave broke right in the alleged channel, so I turned out again.

By this time the sloop had arrived opposite us. I watched her carefully through the glass, and when she luffed into the wind and a man waved his hat I concluded *that* was the place to enter, so turned in, and found myself inside the reef in very deep water. I stopped, dropped the canoe over, got a pilot off the sloop, and felt that my troubles were over, as it was all plain sailing now. We anchored off Fort San Carlos, sent the papers ashore and picked up a river pilot to carry us to Maracaibo, and also a guard from the Aduna.

By this time it was dark, and as it was very rough, I persuaded the new pilot to take us to some quiet place so we could eat and sleep. He took us about three miles up under the lee of a small island, where we anchored for the night at 6:30. The steward got some soup and coffee for me and cooked something for the men, the first food we had had since 4 o'clock the previous day, except dry bread, as it was so rough I was afraid to light the galley stove while outside.

I had made up my mind to stay at sea all night in the event of not getting to San Carlos before dark. The joke of the thing, however, was that we never knew exactly where or when we did cross the Maracaibo Bar, the one place I had been told was so terribly rough. We had been in such rough water for so many hours that we forgot all about what might be coming to us. Anyhow, it was no worse than plenty of other places I have had the Min-Mo in, and nothing like the sea we found coming through the Dragon's Mouth or back of Centinella Rocks.

Monday morning I ran over to the fort to get my papers, and from there up the river to Maracaibo, a distance of about 35 miles. The lower part of the river is very flat, the channel twisting about from one side to the other, and marked by clumps of stakes, but nearer the city the water is much deeper, and at times seems perfectly fresh.

We arrived at 1:50 P. M. and anchored in front of the Aduna, where we were boarded by the officers and my papers examined. The Min-Mo, as usual, attracted a crowd, and as soon as we obtained *pratique* we had many visitors, who seemed to think that a voyage on her from Port of Spain was quite a "stunt."

I found on figuring up that we had run about 845 miles in 107 hours' running time and burned 490 gallons of gasolene. The engine worked beautifully; never missed an explosion from Guanoco to Curaçao, where we took on a fresh supply of gas. I think there must have been water in this lot, as we had continuous engine trouble the rest of the way, being unable to get speed, and one or the other of the cylinders missing. Several times the engine stopped entirely, and finally refused to run on the magneto at all.

Thus ended a trip I had been looking forward to with mingled feelings of pleasure and dread. I would not care to repeat it at once, as it became very tiresome and I was at times exceedingly worried and anxious, especially when I found my pilot, on whom I was depending, was worse than useless.

Through the Straits of Magellan in a "Forty-Niner"

The Account of a Passage Made Through the Dangerous Straits by One of the First of the Fleet of Sailing Vessels That Carried a Party of Argonauts to California When the Discovery of Gold Brought the Rush to "the Coast"

WHEN the discovery of gold in California brought the rush to the Pacific Coast in 1849, the three routes to the Eldorado opened to the Argonauts were, first, overland; second, by way of Panama, with a march across the Isthmus and a doubtful passage on the Pacific side, and, third, by way of Cape Horn. Probably the larger number went by the latter route, and it was due to this rush that the Straits of Magellan became better known.

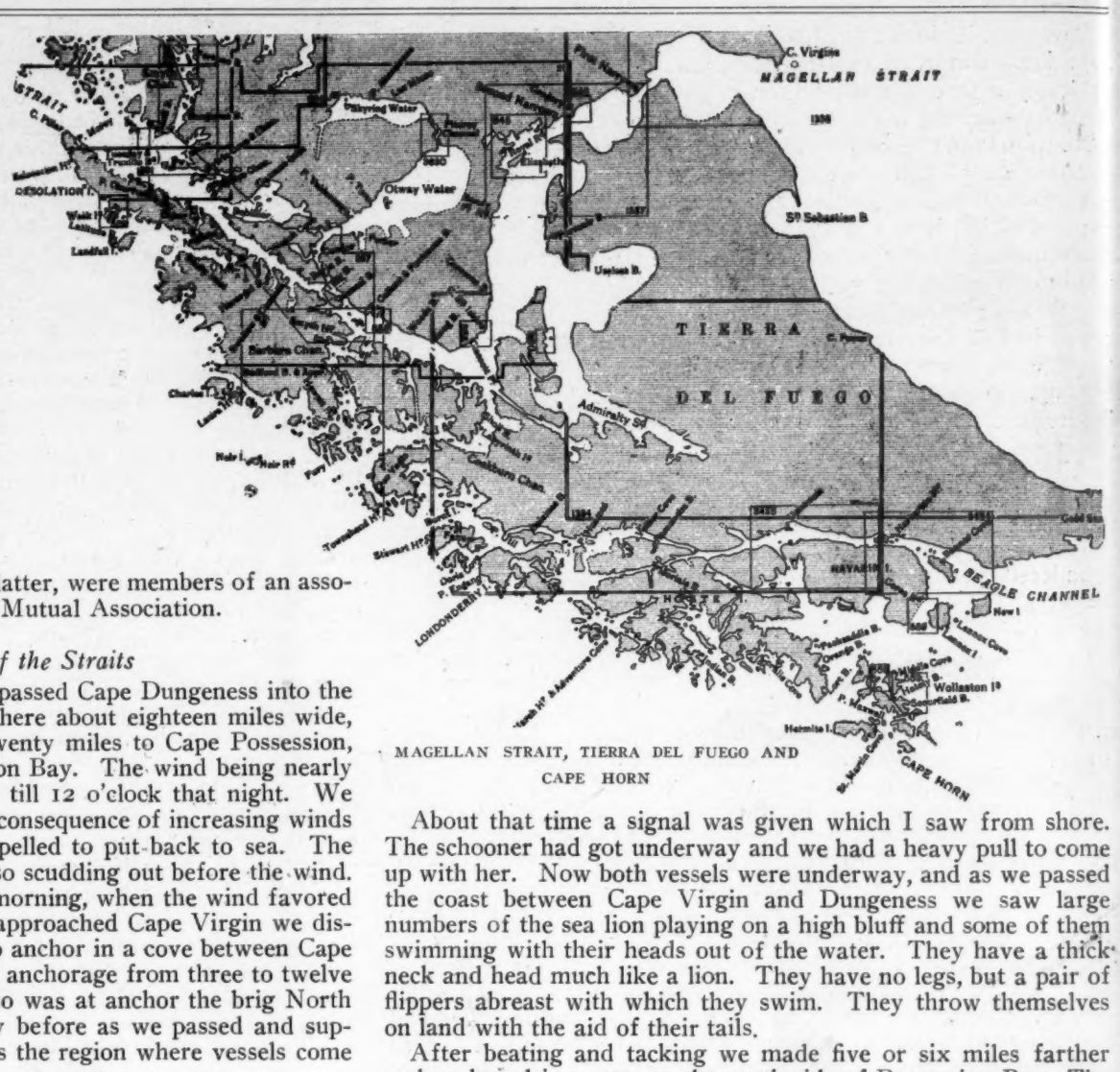
Vessels of all sizes and types were bought, fitted out and manned by associations of gold hunters, many of whom had never been to sea before, the command, however, being entrusted to experienced shipmasters. These voyages are particularly interesting at the present day as showing the conditions which prevailed at sea at that time, and the hardships which were endured, for the most part by men used to the less strenuous occupations of civilization.

The story that follows is the account of a trip through the Straits of Magellan by a party that left New York in a small schooner on the third of February, 1849, in the first flush of the rush to San Francisco. It is told in a letter sent home by one Montgomery A. Tabele. It was written during the voyage and sent back upon arrival at California, where the writer died some time later. He does not say much about the vessel upon which he sailed. She was probably a small topsail schooner in the neighborhood of 100 to 150 tons burden.

San Francisco, Cal., August 6, 1849.

After the voyage of six months and three days, or 186 days, I arrived safely to my port of destination (San Francisco, Cal.), in good health and condition. After entering the Pacific I wrote you. I gave it to a man in Callao by the name of Balivin, that was going to the States. I hope you have received it before this time. Nine weeks after leaving the Port of New York we came in sight of Cape Virgin, the entrance of the Straits of Magellan. It was our intention to round Cape Horn, but, having so much bad weather, the Captain altered his mind of the Horn, and made his way for the Straits. This was the first land we had seen since leaving New York. The Straits are about 450 miles long from the Atlantic to the Pacific Ocean.

At Cape Virgin we fell in with the schooner Roe, of New York, of 175 tons, and the North Bend, of Boston (a brig). The Roe was 29 days from Rio, and there fell in with the Farlinta, the Pacific, the Apollo, the Sutton and Express, and several other vessels from New York bound for California, numbering in all about three thousand people. At Rio the Emperor had issued a proclamation extending the liberty of the city to the Yankees, both day and night, with no restraints, except that the persons and property of citizens should be exempt from molestation. The Roe left New York January 25. She numbered, including the crew, forty-eight, all of whom, excepting the latter, were members of an association which was called the Roe Mutual Association.



MAGELLAN STRAIT, TIERRA DEL FUEGO AND CAPE HORN

Blown Out of the Straits

After leaving Cape Virgin we passed Cape Dungeness into the mouth of the Straits, which are here about eighteen miles wide, and the bearing north by west twenty miles to Cape Possession, the interval being called Possession Bay. The wind being nearly ahead, we tacked back and forth till 12 o'clock that night. We only made fifteen miles when, in consequence of increasing winds and heavy squalls, we were compelled to put back to sea. The Roe showed her light and was also scudding out before the wind. We drifted out to sea, lay to till morning, when the wind favored us and we put in again. As we approached Cape Virgin we discovered the schooner Roe lying to anchor in a cove between Cape Virgin and Point Dungeness, and anchorage from three to twelve fathoms close in shore. Here also was at anchor the brig North Bend. We had seen her the day before as we passed and supposed her to be a sealer, as this is the region where vessels come for that purpose.

About 10 o'clock we came to anchor between the two vessels and within hailing distance of each, and again went forth the soul-inspiring cheers of three times three for each other, and B. Hoys fired a salute from my brass piece for each of the vessels. The North Bend had been laying here six days and had made five attempts at rounding Cape Possession, and as often been obliged to return for safety.

In the afternoon the three vessels were under way again, and after beating and tacking till we had made about the same point again to the Straits we were obliged to put back to our anchorage. The Roe had anchored in the cove when we came up. We cast anchor just inside of her, but the wind, driving very hard, caused us to drag anchor for some three or four miles east of Cape Virgin, when, finding it impossible to hold, a buoy was attached to the cable and let go.

We then lay to with reefed foresail and drifted out to sea till about 4 o'clock Thursday, April 5, when the wind favored us again, and we put back to search for our anchor. After beating in the rain till afternoon we put into anchorage again and cast the other anchor. A party, with the mate, went in search of the lost anchor. In the course of two hours they returned with the news that they had found it. We then put about our vessel again and proceeded to secure it, which was accomplished in about two hours. We then put back again to the old anchorage, after which I went ashore with seven others, a row of about a mile and a half. On the shore of Cape Virgin were vast quantities of the bones of animals, probably those of the guanaco, a species of deer, the buffalo, and the walrus or sea lion, as in the daylight we saw these animals about. Some of them would weigh, I suppose, from ten to fifteen hundred pounds or more.

About that time a signal was given which I saw from shore. The schooner had got underway and we had a heavy pull to come up with her. Now both vessels were underway, and as we passed the coast between Cape Virgin and Dungeness we saw large numbers of the sea lion playing on a high bluff and some of them swimming with their heads out of the water. They have a thick neck and head much like a lion. They have no legs, but a pair of flippers abreast with which they swim. They throw themselves on land with the aid of their tails.

After beating and tacking we made five or six miles farther and anchored in a cove on the north side of Possession Bay. The weather was like our March. Sunday, April 8, we weighed anchor at 4 o'clock in the morning; the tide soon came up and carried us on rapidly through the first narrows, nine miles long and two wide, into a wide bay beyond. But the tide slacking and the wind being against us, we came near driving upon a shoal of rocks. There being no anchorage, we put back through the narrows at twelve knots to the south of Possession Bay, with foresail reefed. The current through the narrows is extremely rapid.

Anchoring, the two small boats were lowered, and some twenty-four of us went ashore on a reef at low water. This reef was covered with black mussels. We walked something more than a mile before coming to the mainland, then proceeded across a low plainland, dry and sandy, covered with short stiff grass, mostly about six inches high, dried at the top, yet green at the bottom. Tracks of guanaco and buffalo were everywhere seen.

After crossing the plains, we ascended a steep nearly 200 feet high, covered with grass as far as the eye could reach. While on shore I shot a duck or shag, two sand snipes and an essence peddler (skunk?) after a sharp fight. While passing through the narrows on the tableland above the bluff large herds of guanaco were feeding, but did not come near enough to the shore to allow us to shoot any.

At 8 o'clock in the evening got underway again quickly. Drifted through the narrows, most of the way stern foremost, into the Bay of St. Jago, some twenty miles from the anchorage, having gained more than we lost by running back. Anchored here early in the morning, got underway with the tide, and passed quickly through the second narrows by the Island of Santa Maria Magdalena and Elizabeth Island. About noon the brig, North Bend, and the pilot boat Hagstoff heaved in sight as far as the eye

could reach. We gradually gained on them and passed gaily down the Straits some thirty miles with a free wind blowing from the northwest.

About 9 o'clock in the evening came to anchor in the snug and safely-sheltered bay of Port Famine. About one mile from the shore the Hagstoff anchored a little before us. But the North Bend on rounding the point which sheltered the northern side was overtaken with a calm and opposite tide and was obliged to anchor two and one-half miles out. The Roe had arrived one day before us. There is a Chilean settlement here. It is guarded by soldiers. At 4 o'clock in the morning a small party of six lowered a boat while the rest were asleep and pulled for shore. After pulling or rowing something more than a mile we landed on a shoal, sandy beach, walked back a few hundred yards, and entered a wood of small trees. We saw track of cattle, as we supposed, and a small enclosure with a thatched hovel, where they had been sheltered. Near it was a cabin made of rushes and turf.

Exploring Ashore

Fearing that we might disturb the inhabitants and that they would become alarmed by our unexpected approach and attack us, we made tracks for the beach. We afterwards found, however, that there was no cause for alarm, as the people were very pacific and friendly. We then rowed opposite (to the other side of the bay), just below the town, to approach it. At this unreasonable hour, though it was daylight, we ascended the steep bank and passed in an opposite direction toward the woods about two miles distant in search of game, but seeing nothing and finding it unpleasant to wallow through the long grass, soon made our way back. We now hurried on board just in time for breakfast, for which we had excited a keen appetite for salt junk (beef and pork).

Soon after breakfast a party from each boat went ashore after water at the spring, and great it was to get a draught of pure spring water again. After filling our cask we went up to the village. It contained from thirty to forty huts, and, situated at a point having a view of both bay and Straits, is an admirable location for a military post, and has been well chosen by the Chilean Government. There are three pieces of cannon, one leveled toward the bay, one up the Straits, and one to the east, the last of which to fire upon vessels attempting to pass without permission. There were 350 people—men, women and children—about 50 of whom were in the garrison.

After being three weeks out from the city of New York we lost our potatoes by frost and consequently I did not taste a particle of vegetables till we got to Cape Dungeness, in the Straits. Then I went aboard of the Roe and asked for some. They gave me a tubful. It lasted one meal. I ate nothing but salt junk and pork for four months, and no butter. How would you like it?

Working Through the Crooked Straits

April 14, Saturday, left Port Famine and anchored about 4 P. M. in St. Nicholas Bay, on the Patagonia side, some thirty miles distant. The brig set out with us and came to about the same time. A small party of us went ashore with the Captain, also the Captain of the North Bend, in his boat. In the cove we proceeded up a most beautiful river. It is a smooth, clear stream, flowing down from the mountains, with a deep channel extending close to the bank on either side, so we stepped ashore from the boat. The whole landscape, with all its variety, was picturesque and wild in the extreme.

After getting underway April 15th, in company with the North Bend (brig), came to anchor in Snug Bay, on the Patagonia side; the brig came to about an hour after. The next day, made an attempt to weigh anchor, but the wind and the tide were so unfavorable we lay to till the following day.

April 17 got underway in the morning in company with the brig, which we soon left in the rear. High winds, cold and squally, during the day. Having gained a few miles, came to anchor in St. Andrew's Bay. Lost sight of the brig rounding a point. This night was my mid-watch, and I was instructed to call all hands at 5:30 o'clock, but, being favored with a fair wind, turned them out at 4 o'clock. Soon got underway and sailed twenty miles into English Reach, but, tide and wind turning against us, runned back some five miles and anchored in Elizabeth Bay at past noon. In the morning of this day we fell in with two Chilean vessels, one a (brig) man-of-war, the other a ship with naval stores, on a cruise and bound for Port Famine, whence they were to remove some of the garrison. The man who spoke us used good English. We passed some unusually wild, ragged and singularly picturesque scenery to-day, while numerous coves and inlets help to complete the scene.

April 19. Got underway early this morning, though the wind was mostly ahead and constantly shifting as it came down the ravines of the mountains and around the islands. We succeeded in getting about midway through the Crooked Reach into Borjo Bay, which is about two miles deep and surrounded by towering peaks from 1,000 to 2,000 feet high, covered with snow. In this bay we fell in with the brig Saltillo, of Boston. She was the second vessel out of the United States for California. She had been in the Straits for five weeks and had been here five days waiting for a fair wind. On the shore were some fifty or sixty Terra del Fuegians, consisting of men, women and children, and some twenty dogs. After putting our Captain on board of the brig, I and four others went ashore. Hunter and the rest were afraid and stayed aboard. We were armed with knives and pistols. After landing, they came to meet us. I put out my hand to them, and they were afraid of me. I fired one barrel of my pistol in the air, and they all ran as if the old devil was after them. I made a sign of friendship to them by going to and in their huts; they doing the same by filling my whiskers and hair full of fine feathers and dancing around me. Afterwards we went along shore after mussels.

On the Pacific Ocean

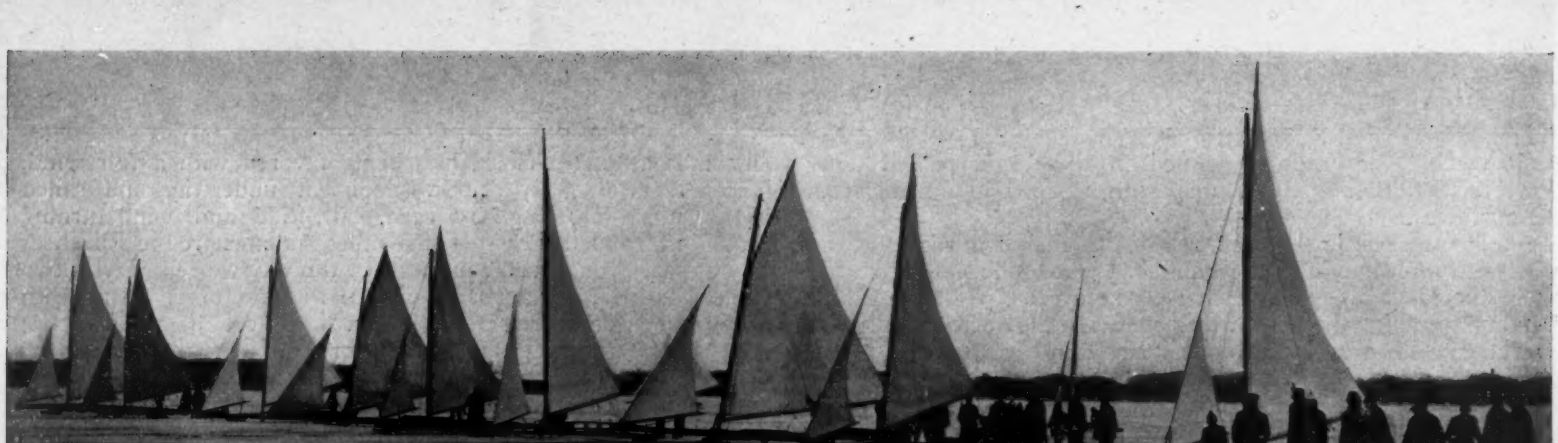
Sunday, the 22d, we sailed, in company with the brig, and Monday, the 23d of April, at 2 o'clock, we were on the Pacific Ocean. I thought we would have good weather on the ocean, but not so. We came out at latitude 52 degrees. Borgo Bay is about 100 miles from the Pacific, and if we had not a fair wind we would not have made the 100 miles in four or five days; but luck is all!

You may think I had a fine time of it by landing so many times. You are mistaken. I would rather have been at sea, two to one. These Straits are very dangerous. You don't see your way five miles before you, and all the sailing you do is by daylight. You can't anchor anywhere you like. If you don't make an anchorage after sailing all day you must run back where you came from and try it again.

After entering the Pacific there were very heavy swells on, as after a storm. The weather was damp and heavy. The swells grew worse, and the winds increased, and three days after we had nothing but head winds. Once, laying to in a heavy sea and wind we were tripped (or the sea left her), her head went down in the trough and broke off our flying jibboom as if it had been a pipe stem. This spar is some twelve inches through. We had very bad weather and a hard time of it in the Pacific till we got in 30 degrees S. latitude, and from there to Callao, Peru, 10 degrees S. latitude, very good. We stayed nine days at Callao and Lima, and took nine passengers, one a Lima lady. The women all smoke here as well as the men.

As my sheet is very near filled, I must give you the particulars of Callao and Lima in my next; also of California. That will be two weeks from this date. Washington's birthday on the Atlantic we gave Philip (possibly the backer of the expedition) three cheers. The Fourth of July on the Pacific, all a little sunstruck. Gave Philip three times three and again we drank his health a-standing. I felt so funny I threw two bottles, four cups and my cap overboard. Two or three did the same. It was a glorious day.

I don't think this association will stand it throughout; but that is nothing, for if we split I won't be alone. There are five now that want me to haul off with them, but I say, "No; we have come some thirty thousand miles together, let us stick it out together!"



LINE-UP OF THE MENDOTA YACHT CLUB FLEET ON LAKE MENDOTA, MADISON, WIS.

The Northwestern Ice Yachting Association Regatta at Oshkosh

By PHILIP PORTER

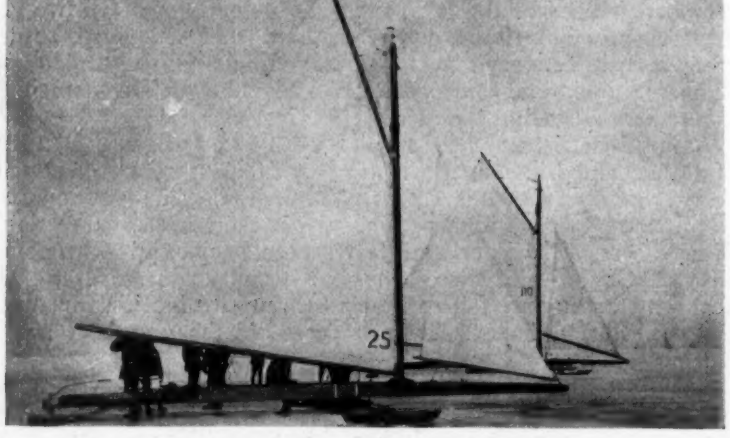
THE Northwestern Ice Yachting Association regatta, which has become in the last two years the fastest and "classiest" ice yacht regatta in the Northwest, and ranks, at least so Western ice yachtsmen believe, among the foremost regattas of the country, was held at Oshkosh, Wis., on Lake Winnebago from January 17 to 24. The regatta was set for an earlier date, but first lack of ice and then lack of wind were responsible for several postponements.

Some twenty yachts representing the Oshkosh Ice Yacht Club, of Oshkosh, Wis.; the Marinette-Menominee Ice Yacht Club, of Menominee, Mich., and the Mendota Yacht Club, of Madison, Wis., were on hand for the contest. They were divided into three classes determined by a maximum sail area limit. All yachts under 625 square feet of sail were eligible to Class A, under 450 feet to Class B, and those under 250 feet to Class C.

The regatta certainly upset a lot of "dope" which has been written in regard to side-bar ice yachts. It has been generally conceded, at least in the East, that a Hudson River type of ice yacht would have little trouble beating a side-bar yacht of twice her size. The only two side-bar yachts in the regatta, Princess II and Yellow Kid, both of Madison, won rather easily in their respective classes, while in a free-for-all race we saw the little Yellow Kid, in a hard wind, beat all the big Hudson River boats, some of which were more than twice her sail area. The trick was turned again in the light wind which prevailed throughout the regatta when Princess II, with but 426 feet of sail, won three out of four races in Class A from boats ranging from 450 to 625 feet of sail area, and when Yellow Kid won all three of the Class C races.

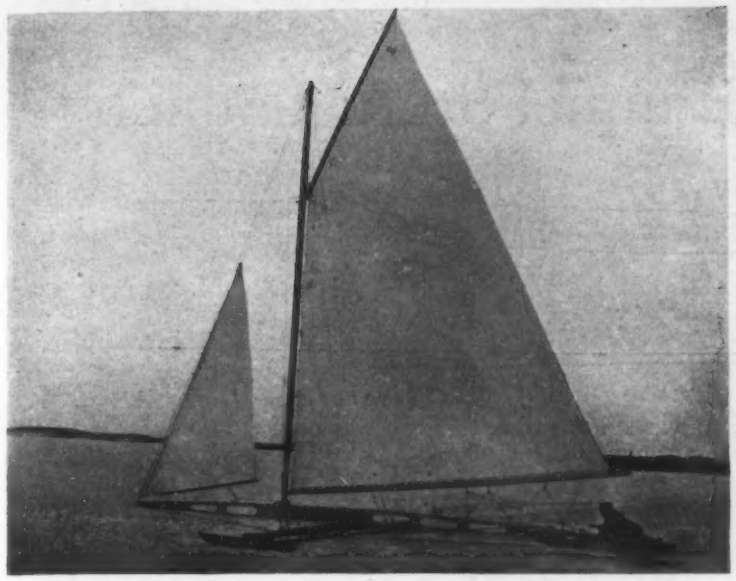
Among the Class A racers which are deserving of special mention are the Aurora, of Menominee; Mercury, of Oshkosh; Square People, of Menominee, and Princess II, of Madison. Aurora is a big Eastern machine, which has been purchased by Mr. Hennes, of Menominee, and which was sailed in the regatta by him and Commodore Wall. She is a beautiful yacht, both in quality of workmanship and in lightness of construction. She carries 625 square feet of sail and landed second place in the regatta. Mercury, of Oshkosh, owned and sailed by John Buckstaff, carried 540 feet of sail; and while she only landed fourth position, she was no doubt handicapped by the lightness of the wind, as was also Square People, of Menominee, a 625-foot boat and last year's champion. Square People is built after Dr. Stanbrough's well-known patent.

The leaders in Class B were Debutante, a Milwaukee boat sailing under Oshkosh colors, and Freak, of Madison. Freak, designed by Lester Howe, is somewhat of a departure in ice-yacht construction. Her box is immediately aft of the runner plank, the steering gear being controlled by iron bars leading aft to the rudder. She proved her mettle by winning two races, which were thrown out on account of the expiration of the time limit.

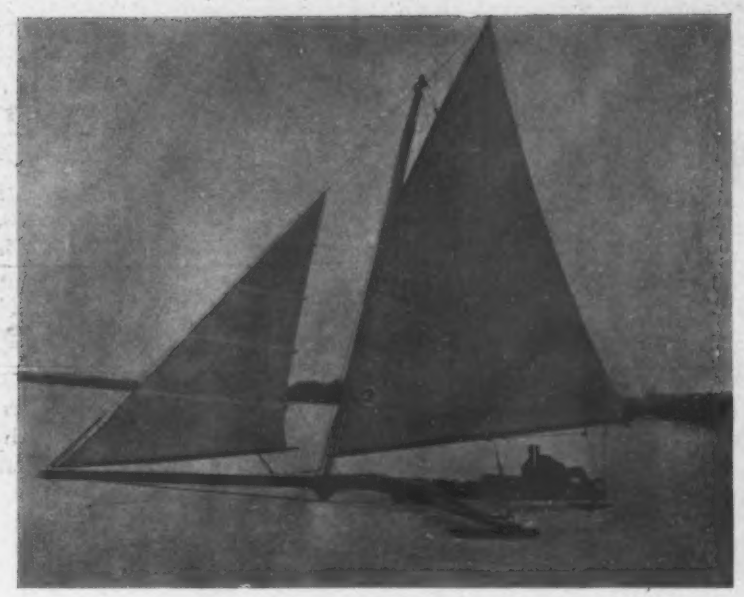


DEBUTANTE, WINNER IN CLASS B

PRINCESS II, CLASS A CHAMPION



M. Y. C., A HUDSON RIVER TYPE



YELLOW KID, A TYPICAL SIDE-BAR BOAT

The first race was called on Saturday, January 17, at 2:30 o'clock for Class A. Square People led for awhile, but struck a calm and was passed quickly by Aurora, Princess II and Mercury, in order. The race was of twelve nautical miles, around a triangular course, and Aurora covered the distance in 48 minutes and 52 seconds, while Princess II took 50 minutes and 25 seconds. Five of the starters did not finish, owing to the light wind.

In Class B, Freak, of Madison, won, but was 15 seconds over the time limit, and the race was declared off. Class C suffered the same penalty after Yellow Kid, of Madison, had outdistanced her competitors.

On Sunday morning, the 18th, the Madison boats, Princess II, Freak and Yellow Kid, were again robbed of victory by the expiration of the time limit, but that afternoon the "A" raters managed to sail a real race. Princess II led handily all the way and finished in 57 minutes and 50 seconds, while Mercury pushed Aurora hard for second place and was in turn hard pressed by Square People. The other boats withdrew as in the previous race. These last are all heavy weather boats and had hard work sailing at all in the light air.

On Monday there was no wind, and on Tuesday the ice had softened so as to make the going too dangerous for the big fellows. Two races in the smaller classes were held, however, Debutante winning each time in Class B and Yellow Kid in Class C.

On Wednesday there was a rattling good wind, but in a trial spin Princess II had the misfortune to run into a crack and get a bad smashup. Her owner, Mr. Emil Fauerbach, and builder, W. P. Bernard, had a bad spill on the ice, but luckily were uninjured. Thanks to the good sportsmanship of her competitors, it was agreed to postpone the "A" race until the Princess could be repaired. In Class B, Debutante won very easily, thereby clinching the "B" cup. Her time was 42 minutes and 5 seconds. Flit was second in 55:45, Glide third in 1:05:10. Yellow Kid won the race and title in Class C in 59:15. All others withdrew.

The following day Princess II was again ready and won handily in a race against time. The wind was good at the start, but kept dropping and almost caused the time limit to elapse. The Princess' time was :58:39 and the Square People, sailing a beautiful race, got a good second in 1:00:38. The rest of the boats withdrew in the course of the race, as the wind failed.

On Friday the breeze was much better and the Princess won again. She took the lead early in the race and never was headed, finishing in 46 minutes flat. Aurora was second, in :48:10, and Mercury third, in :53:00.

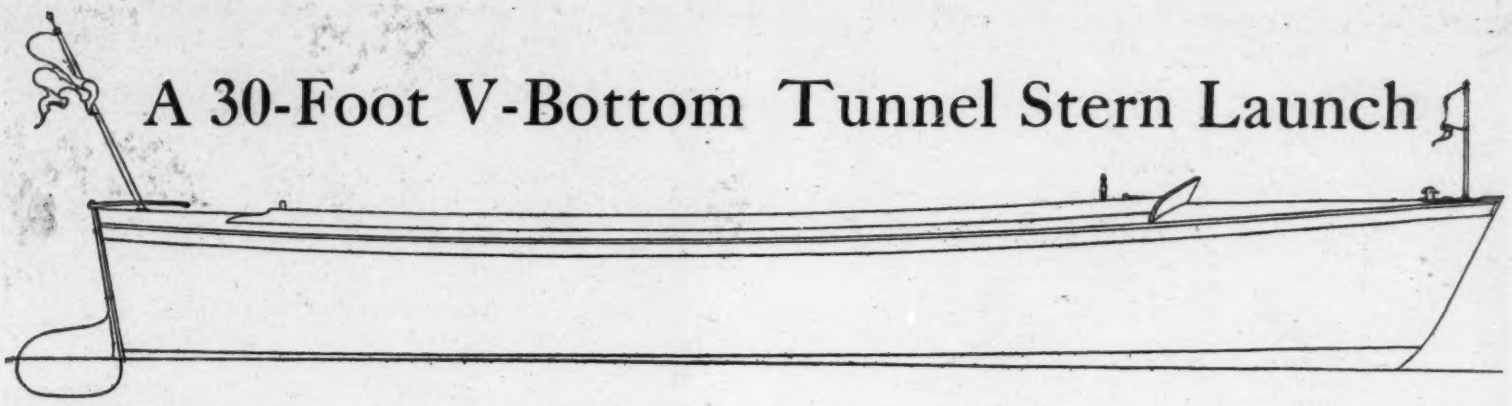
In the afternoon the Square People's Trophy was sailed for by the whole fleet and was won by Debutante. That evening the cups were awarded to the winners. There was a beautiful line of silverware, due to generosity of the Northwestern Ice Yachting Association, the Oshkosh Yacht Club and the ice-yacht "fans." Princess II of Madison was awarded the N. I. Y. A. Class "A" Championship Cup, the Evening Wisconsin Class "A" Challenge Cup, and the O. I. Y. C. Class "A" Trophy. Aurora received the N. I. Y. A. Class "A" second prize trophy. Debutante was awarded the N. I. Y. A. Class "B" Championship Cup, the Evening Wisconsin Class "B" Challenge Cup and the O. I. Y. C. Class "B" Trophy, and the Square People's Challenge Cup. Freak took the N. I. Y. A. Class "B" second prize trophy. Yellow Kid was given the N. I. Y. A. Class "C" Championship Cup, the O. I. Y. C. Trophy and the O. I. Y. C. Challenge Cup. Icicle took the N. I. Y. A. Class "C" second prize cup.

(*Continued on page 263*)

NOT A GROUP OF LUMBERMEN, BUT RACING SKIPPERS AT THE NORTHWESTERN ICE YACHTING ASSOCIATION REGATTA

A LINE-UP OF CLASS "A" BOATS AT MENOMINEE, MICH. SEVERAL TYPES REPRESENTED

A 30-Foot V-Bottom Tunnel Stern Launch



THE boat whose plans are published here was designed by Mr. J. L. Foster, a Western naval architect, for a gentleman in Eastern Washington for the express purpose of climbing rapids on the Snake River. As bars and rocks are ferquently met with, it was necessary that the draft be kept down to not over a foot. Hence the tunnel system of construction was adopted. The speed had to be high to overcome the swift water of the Snake. She is powered with a medium to high-speed 30-horsepower engine, which, it is estimated, will drive her nearly twenty miles an hour. Two rudders are used, one on each side of the tunnel.

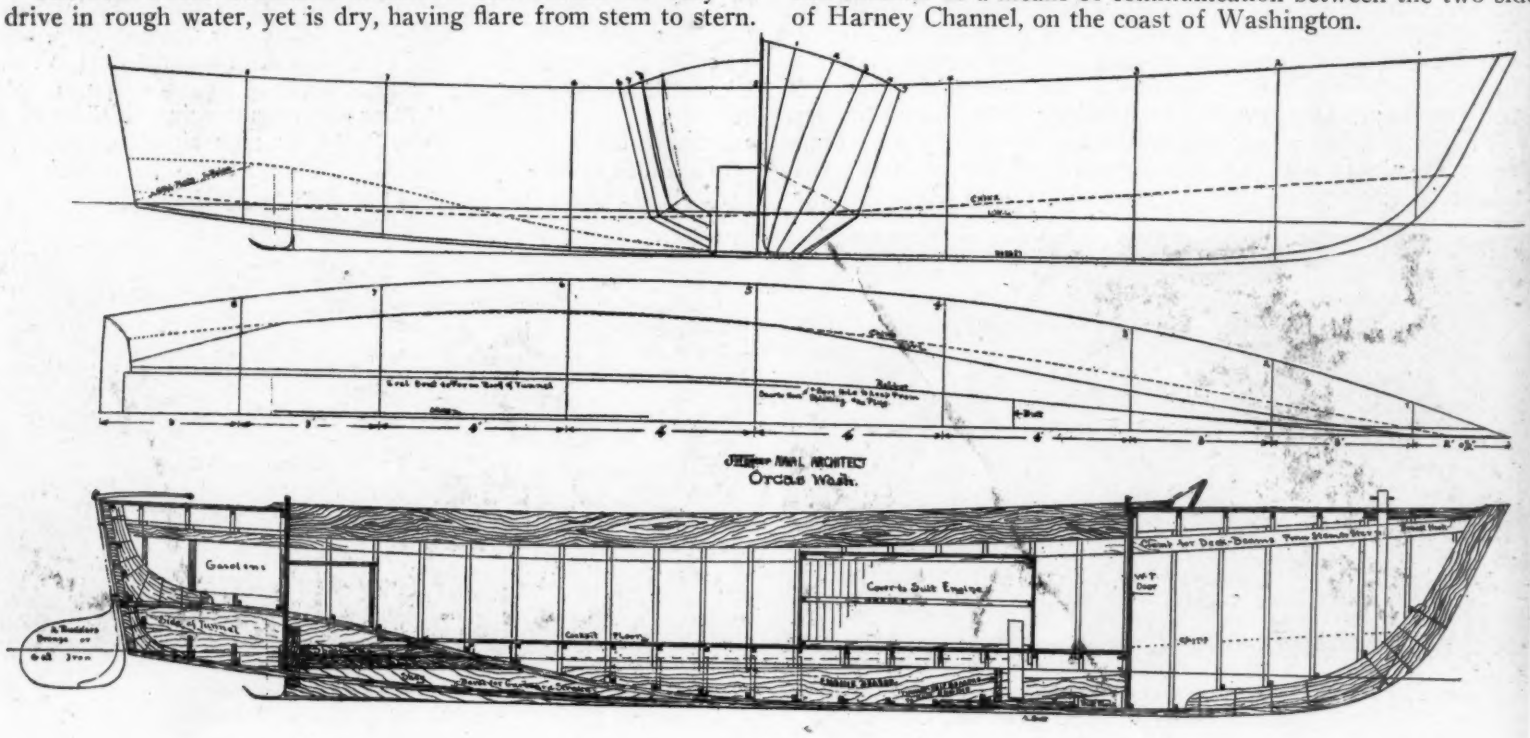
The arrangement is shown on the plan and conforms to the owner's requirements, which called for a large open space between watertight bulkheads. However, the boat would be generally preferred as a runabout. A tunnel stern such as this in smaller sizes, by allowing the boat to run in a few inches of water and take the knocks of running ashore, makes motor boating possible on many shallow stretches of water and "cricks" before unnavigable to the usual deep-screw motor boat. With a tunnel guard she can be run through grass and weeds without strangling her wheel.

The boat under discussion is narrow and should be easy to drive in rough water, yet is dry, having flare from stem to stern. She was built by amateurs and was ready to go overboard in less than a month's time, which speaks for the simplicity of the construction. She is a good-looking boat afloat. The principal dimensions are: Length over all, 30 feet; length on load water line, 27 feet 2 inches; beam extreme, 5 feet 11½ inches; beam at load water line, 4 feet 8 inches; draft, 11½ inches. Her freeboard is high, and she might be improved by cutting it down somewhat, but for the rough waters of the Snake high sides were advisable.

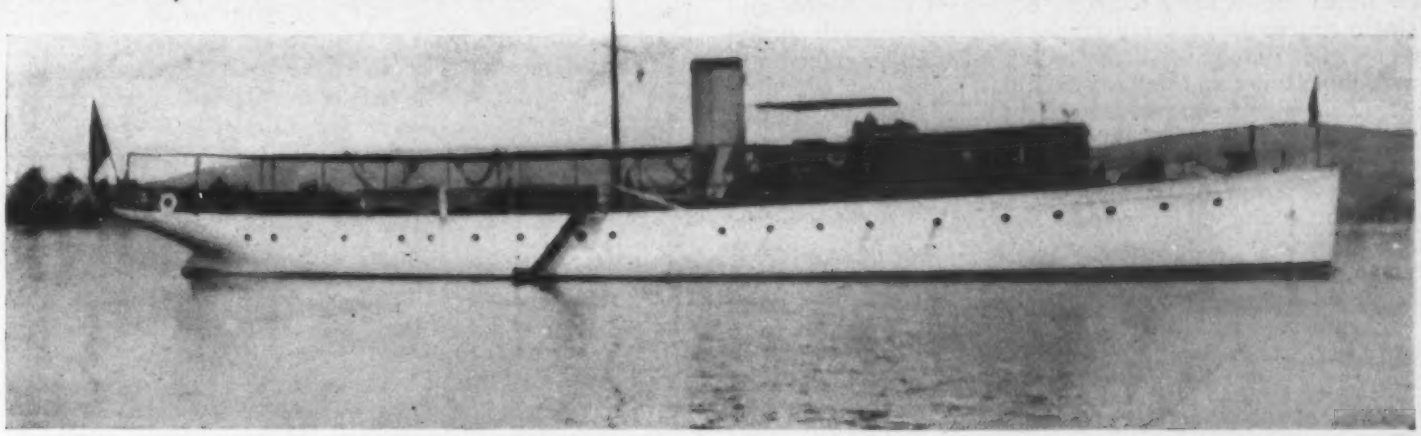
THE RAPIDS OF THE SNAKE RIVER

The requirements of the work called for an extremely easy-driven hull, capable of climbing the rapids at a good speed; hence a narrow boat was essential and is in accordance with the practice among "master mariners" of the Snake. The designer was told that the boat simply had "to git up them rapids." The engine is placed amidships and on account of the tunnel stern and horizontal shaft is low in the boat.

The designer has a 15-foot V-bottom boat of this general model that is only 13 feet on the water line, yet he says that she cannot be careened to the beading by his sitting on the combing amidships and leaning outboard as far as possible. This little boat has been used winter and summer as a means of communication between the two sides of Harney Channel, on the coast of Washington.



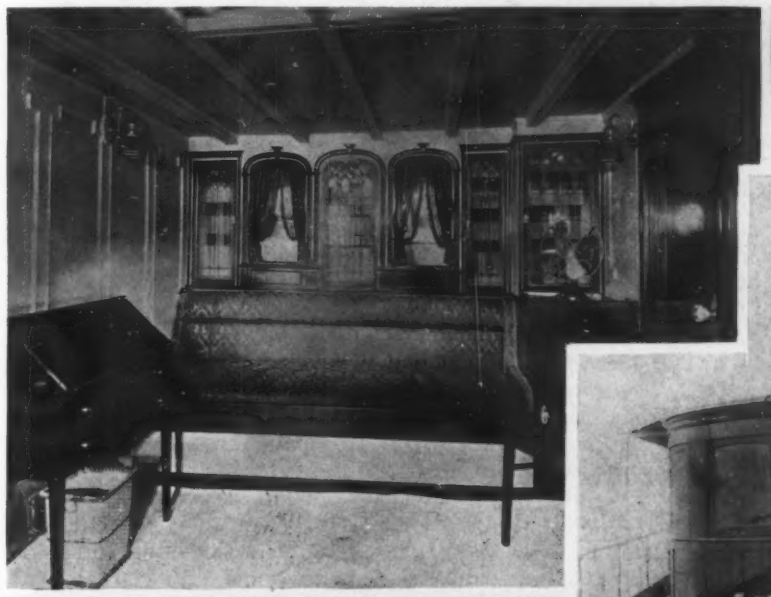
Natoma, A 119-Foot Twin-Screw Power Yacht



IN these days of large power-driven yachts with internal combustion engines it is interesting to note the performance of one of these vessels in actual service, and to know that they "measure up" to all the demands made upon them.

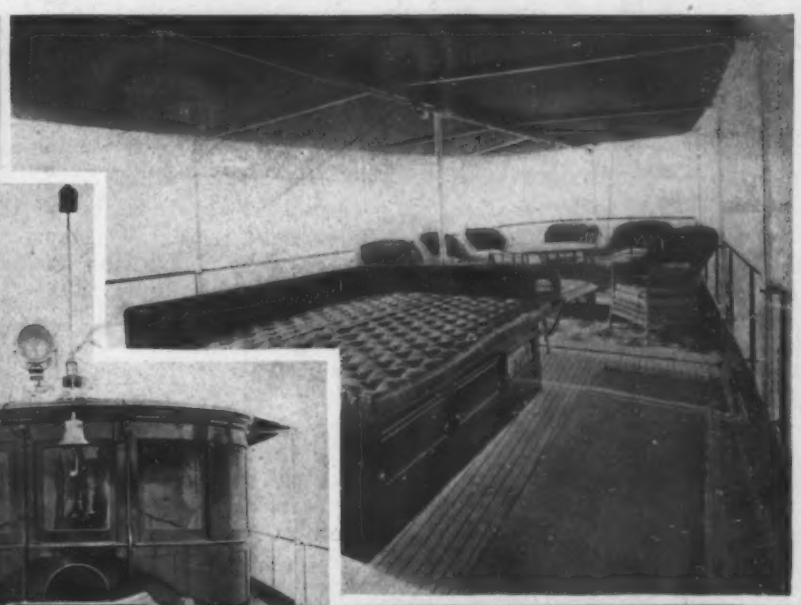
The Natoma, photographs of which we reproduce here, is a new boat designed and built last year by the Gas Engine & Power Company and C. L. Seabury Company, Morris Heights, N. Y., for Mr. C. H. Foster, of the Chicago Yacht Club. She is 119 feet long over all, 112 feet in the waterline, with a beam of 17 feet, a draft of 6 feet, and is powered with two 8½ by 10-inch Speedway motors, developing something over 300 total horsepower

In general, the type follows that of the up-to-date steam yacht, with plumb stem, overhanging stern, good freeboard and plenty of flare to the forward sections. She is built of steel, and the construction is unusually strong for coastwise and Great Lakes' work. She has bilge keels and is flush decked throughout. There is a large deck house, containing a dining saloon with a navigating bridge at the after end of it.



THE OWNER'S STUDY

FORWARD DECK



THE COMFORTABLE AFTER DECK

THE DECK DINING SALOON

THE BRIDGE DECK

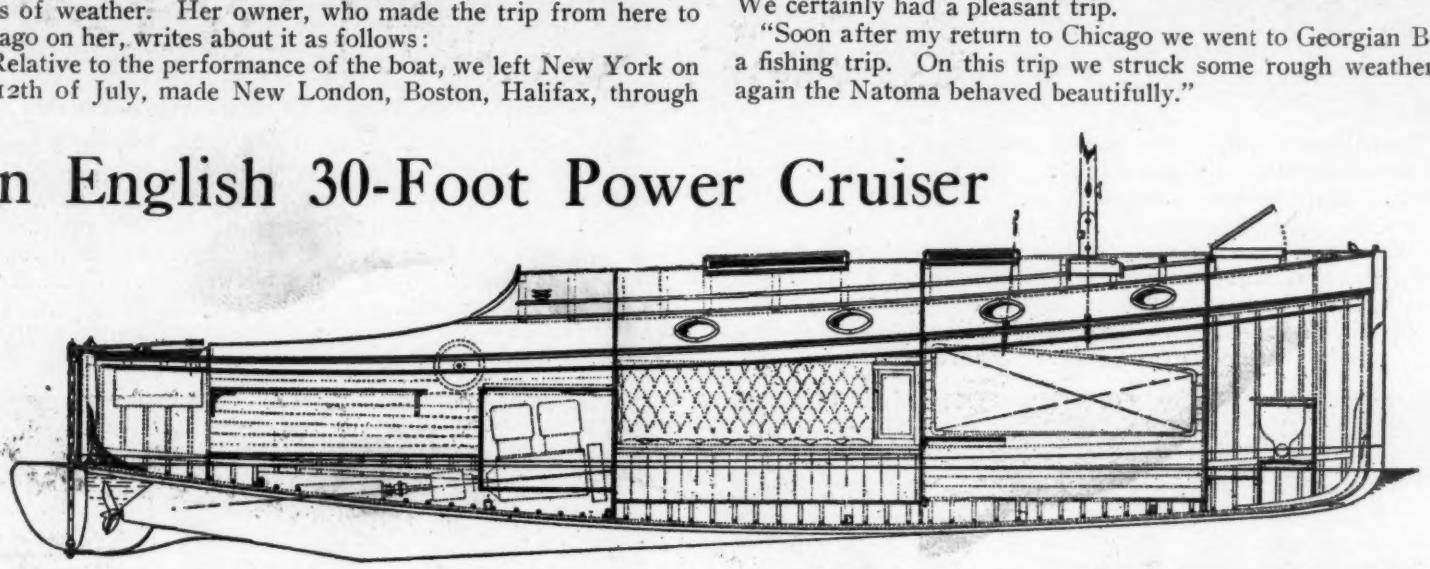
Below decks the owner's quarters consist of two double and three single staterooms, a large vestibule or lobby, a saloon and library or owner's study. All the rooms are well appointed and there are ample toilet and bathing facilities. The power plant is located amidships between two watertight bulkheads, and the two motors, driving twin screws, give her a speed of from 14 to 16 miles an hour. She is, of course, electrically lighted and has a small auxiliary power plant, dynamo, etc. Forward there are rooms for captain and engineer and a large galley and forecastle.

This boat made the long 3,000-mile trip from here to Chicago last year and behaved splendidly throughout. Since then she has been in use on Lakes Michigan and Huron and been out in all kinds of weather. Her owner, who made the trip from here to Chicago on her, writes about it as follows:

"Relative to the performance of the boat, we left New York on the 12th of July, made New London, Boston, Halifax, through the Bay of Fundy, the Gulf and River of St. Lawrence on to Quebec, Montreal, then to Toronto, through the Welland Canal and on to Detroit; from there we went to Mackinac, thence to Chicago, reaching there on the 6th day of August. We had a very pleasant trip, and, according to my seadog captain and all those who were on board, numbering men of sea experience, the Natoma behaved beautifully as an ocean-going yacht. I have had very little experience myself, but the action of the boat was not at all distasteful to me, and I am not a sea-going man. I compared her action at the time with very much larger boats, and it seemed to me that she behaved much more creditably than most of them. We certainly had a pleasant trip.

"Soon after my return to Chicago we went to Georgian Bay on a fishing trip. On this trip we struck some rough weather, but again the Natoma behaved beautifully."

An English 30-Foot Power Cruiser

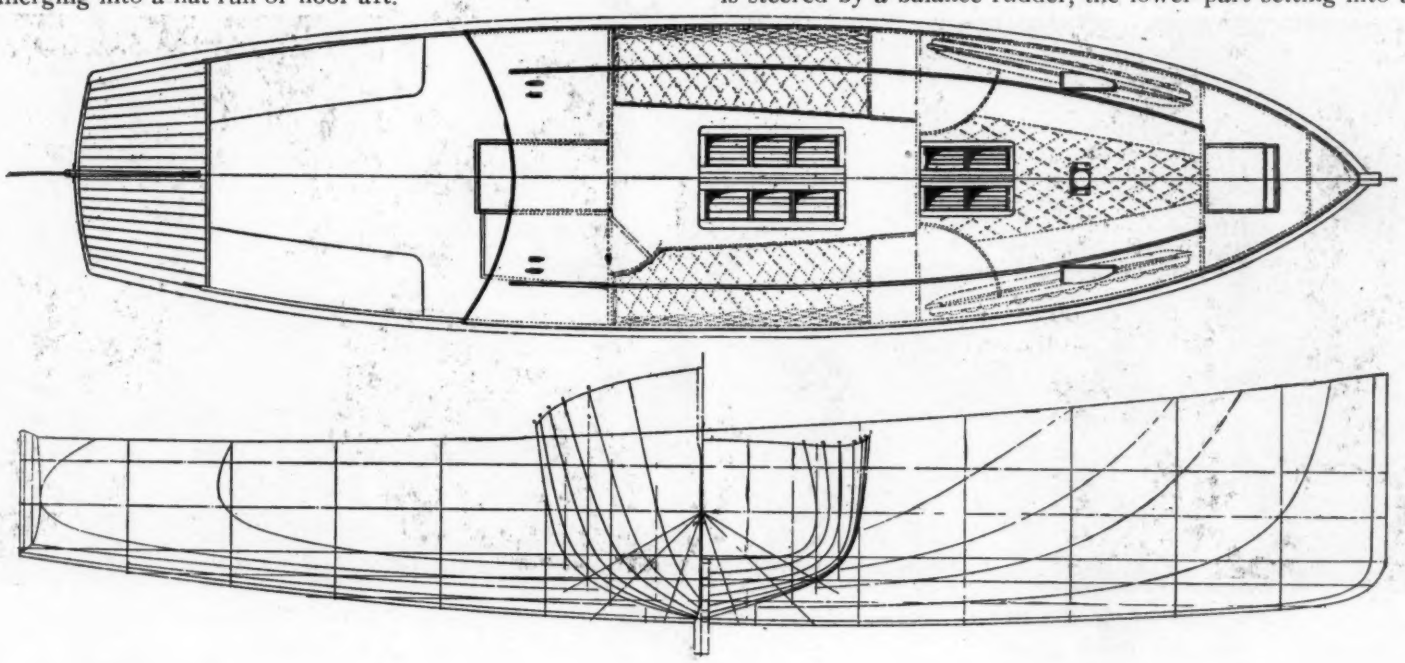


THE little 30-footer whose plans are published here is, according to *Motor Ship and Motor Boat,* of a standardized type of cruising launch recently designed by G. Dickson and built at Southampton, England. She differs radically from the American type, the sides not being raised as high, and the head room being obtained by means of a crown in the raised deck. This deck extends aft over at least two-thirds of the boat, giving a very large cabin, and yet a good-sized cockpit.

The dimensions of the boat are: Length, 30 feet; beam, 7 feet 4 inches; draft, 2 feet 3 inches, while there is 5 feet 6 inches headroom. The boat has a fine entrance, with a fairly hard bilge, giving initial stability, the top side being carried up straight, while in the forward sections there is considerable flare; the after sections have a slight tumble-home. There is good dead rise for the type, merging into a flat run or floor aft.

One point in which the boat differs from the American practice is that the motor, while entirely outside of the cabin, is still covered by the raised deck, the after cabin bulkhead being across the boat just forward of the engine. There is no companion slide, but a few steps down from the cockpit takes one into the engine room, from which a door leads into the saloon. This compartment is 7 feet in length, with transoms on either side, while forward is a sleeping cabin or stateroom with two pipe berths which can be folded back during the daytime, giving a wide passage way to the toilet room forward. By this arrangement the engine is not only protected, but is handy, and is practically out of doors, keeping all odors, grease and dirt from the cabin.

The boat is fitted with a 16-horsepower, 4-cylinder engine, which gives her a speed of about nine miles an hour, while she is steered by a balance rudder, the lower part setting into a skeg.



A 34-Foot Cruising Ketch

THE accompanying plans are of a 34-foot cruising ketch designed by John Alden, of Boston, Mass., for a Philadelphia yachtsman, and under construction at the yard of the Adams Shipbuilding Company, East Boothbay, Me.

This boat is somewhat larger than the "ideal" two-man ketch which Mr. Alden designed for YACHTING last year, being 34 feet on the water line, 45 feet over all, 12 feet beam, 6½ feet draft. She is very similar to the Yale, built for Dr. Grenfell's Labrador Mission, except that her bulwarks are carried up higher, being 8 inches in height at the forward end, and she has a wide transom stern instead of a sharp one, as in the Yale.

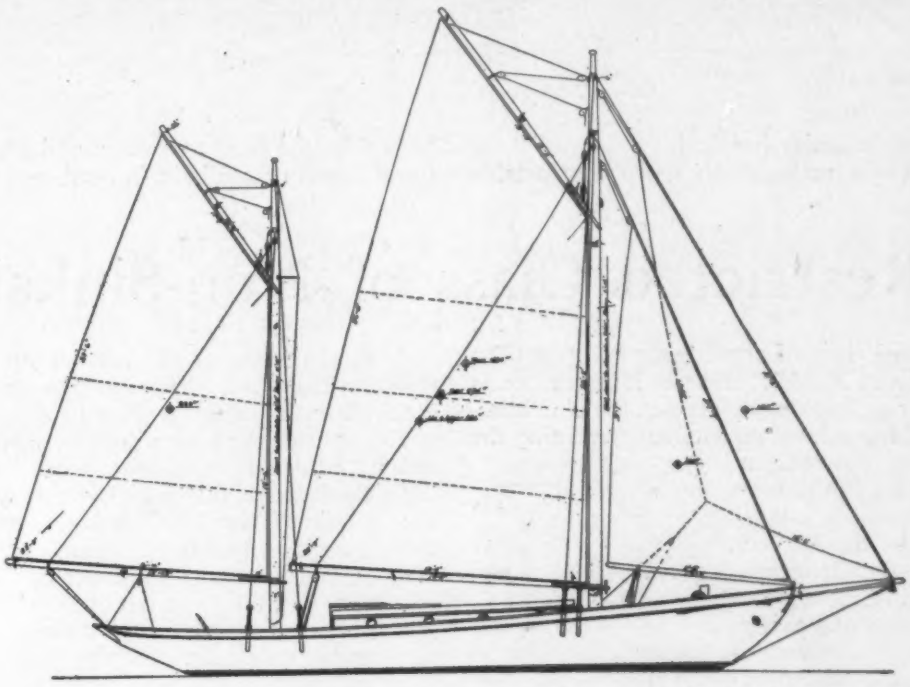
The construction is very heavy, the planking being 1½-inch hard pine, while the interior finish is plain. The spars and rigging are heavy, and the whole rig is laid out to be extremely simple, so that she can be easily handled by two men. The main boom is only 19 feet long and total sail area is 974 square feet. The rig would be hard to improve on for a boat of this type.

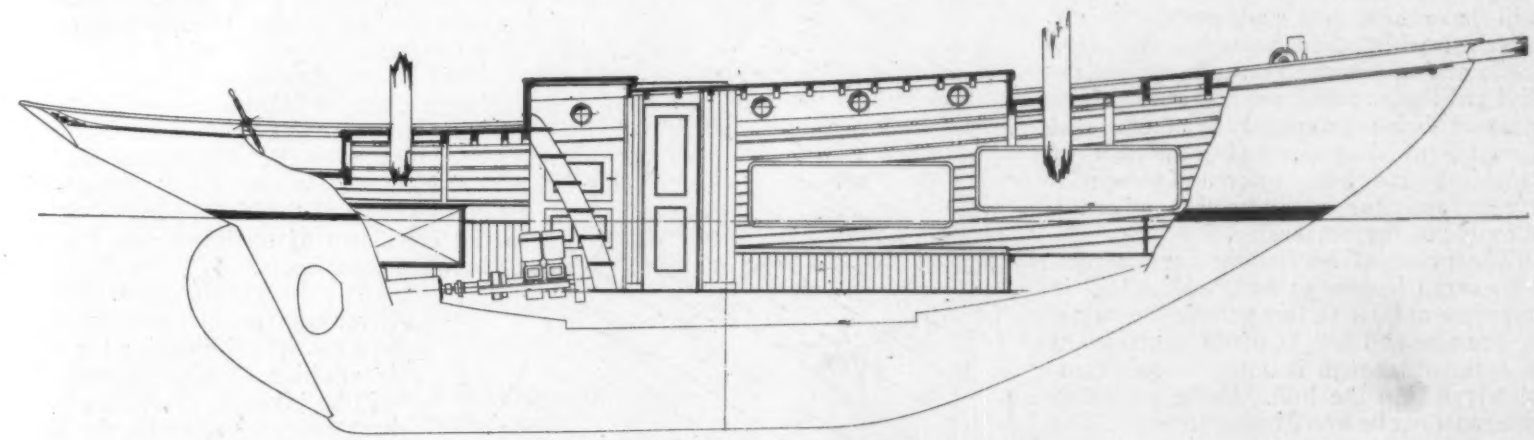
The engine is installed under the bridge deck aft of the cabin and is a 24-horsepower kerosene-burning motor, while her tankage gives her a cruising radius at a seven-knot speed of about 600 miles. The cabin is large and well arranged, especially where no paid hand is carried, and it is not cut up by too many bulkheads.

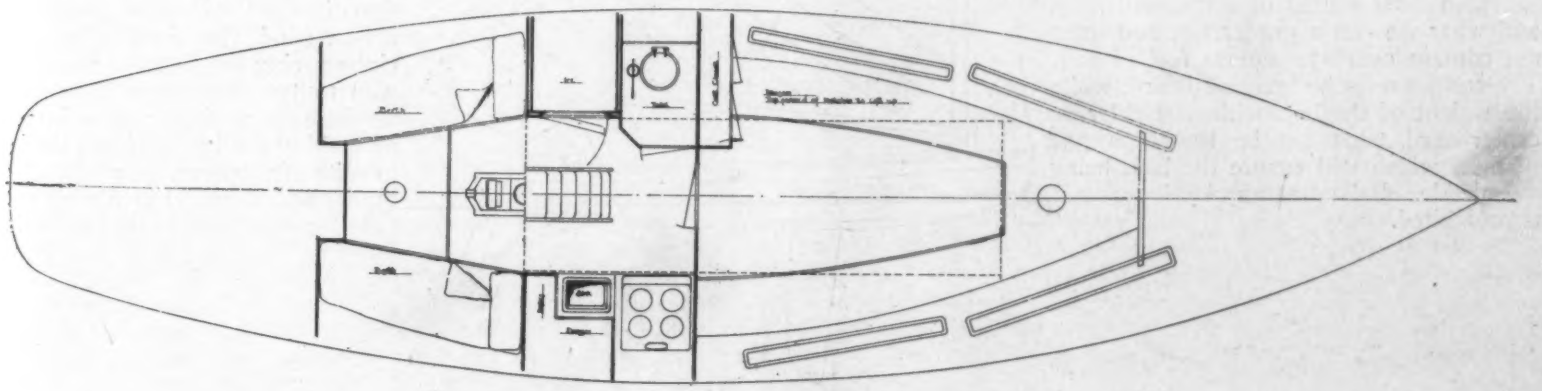
The galley and toilet room are amidships, by the companionway, where they are handy. The main cabin is forward and separated by a partition from the galley and engine in the after part of the boat.

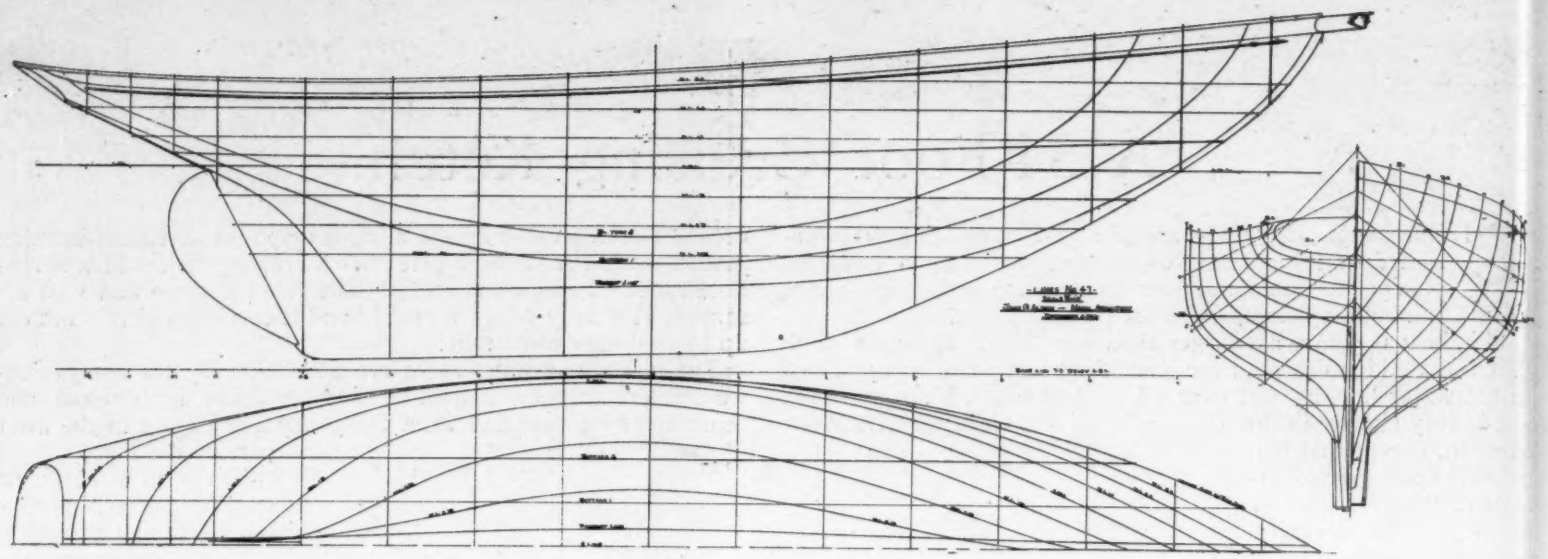
There is a berth on each quarter opposite the engine, providing sleeping accommodation for two persons. The deck house is low and narrow, giving plenty of deck space, while the head room below is 6 feet 8 inches. The boat is fairly fine forward, while she has considerable dead rise and should be easy to drive. The sheer is good, ensuring a dry boat, and she can be hove-to easily or can "jog" in a breeze that is too hard in which to drive her.

The sail area seems a little small for a boat of this size and displacement, but for off-shore work a moderate rig is







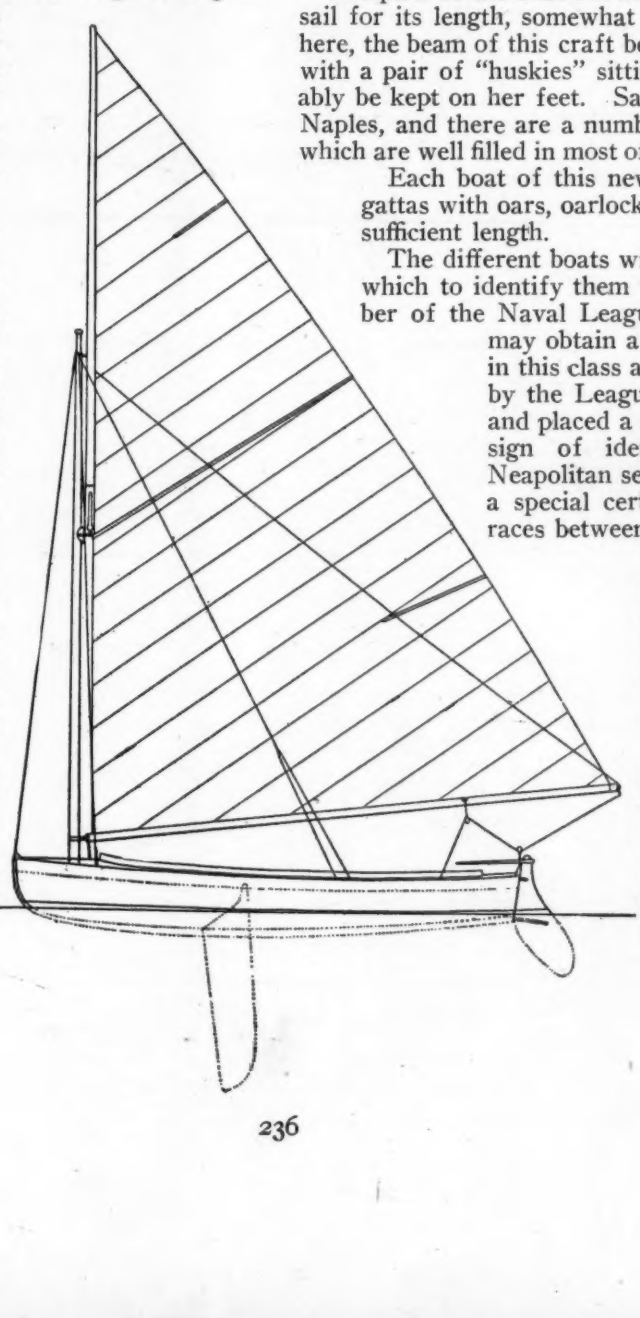


better than a large one and is easier handled.

The pipe berths in the cabin make much more comfortable beds than the hard transoms, and are to be recommended unless there is room for a built-in berth and a transom in front.

A Small Restricted Class of Non-Sinkable Boats

A VERY handy restricted class of small boats has just been organized on the Bay of Naples, and as it corresponds closely to some of our sailing dinghy classes, the plan herewith of one of the boats, and the general restrictions governing the class, should prove interesting to American boatmen. The underlying idea in the formation of the class was to provide a type of unsinkable boat for use on the Bay of Naples that would be of small dimensions, so that it could be built at little cost, with a simple rig, and one that could be easily handled under either sail or oars.



The principal restriction of a minimum weight ensures a strong, able boat that will have long life and yet be evenly matched with other boats in the class, while allowing enough latitude for the individual ideas of designer and owner. The class is being promoted by the Naval League, of Naples, and a number of trophies have been offered for special events and for a series championship throughout the season.

The principal restrictions are: Greatest overall length, 14 feet, with a keel in one piece at least 11 feet 7 inches in length.

The size and weight of the centerboard is optional, though it must house completely within the hull. Decks on either side must not be over 8 inches in width. The sail plan must consist of a mainsail only, and what we call a gunter rig, and must not contain over 172 square feet of sail. The rudder must be hung outboard, while the weight of the hull without rudder or centerboard must not be less than 354 pounds, which will ensure the boat being unsinkable. Ballast of any kind is prohibited.

A good feature of the restrictions is that they are unchangeable for five years. They go into effect on January 1, 1914, and continue until December 31, 1918.

The plan of the boat shown here seems to carry a good deal of sail for its length, somewhat more than boats of the same size here, the beam of this craft being only 4 feet 8 inches. However, with a pair of "huskies" sitting up to windward she could probably be kept on her feet. Sailing is very popular on the Bay of Naples, and there are a number of classes of various sized boats which are well filled in most of the regattas held during the season.

Each boat of this new class must be equipped in all regattas with oars, oarlocks, pail, anchor and warp or cable of sufficient length.

The different boats will receive progressive numbers with which to identify them while racing. Every amateur member of the Naval League of any recognized nautical club may obtain a certificate of qualification of a boat in this class after the "Commissioner" designated by the League has verified the boat in question and placed a mark on the hull, mast and sail as a sign of identification of measurement. The Neapolitan section of the Naval League will issue a special certificate of eligibility for the series races between these boats.

The League has also offered a silver cup for the amateur skippers as a special prize during the season, in addition to which a cash prize will be given to the best all-round boat constructed under the restrictions in the Province of Naples.

Some of the American yacht clubs racing small boats would do well to try some such restrictions as these on a dinghy class instead of making the boats of one design, in spite of the many good points of the latter. It would give more latitude for experiment and for testing

START OF 8-METER BOATS AT NAPLES

THE 6-METER CLASS RACING ON THE BAY OF NAPLES

out different modes and different sail plans than a one-design class, and might possibly result in an abler and more satisfactory type being evolved. The restrictions given here are so simple as not to work a hardship on any builder.

The Possibilities of the Diesel Engine for Yacht Use

A Discussion of this Interesting Subject and Plans of a 175-Foot Diesel Powered Yacht

By MORRIS M. WHITAKER

UNTIL very recently steam has been the only available motive power for large yachts, but within the last few years the type of motor invented by the late Dr. Diesel is rapidly coming to the fore as a rival of steam, both for yachts and commercial vesseis.

During the last three or four years the use of motors operating on the Diesel principle or cycle has advanced very rapidly, and to-day it is becoming a serious competitor of steam, more especially for commercial vessels on account of its manifest advantages. It allows the use of low-grade oils for fuel which can be obtained cheaply at most of the larger ports of call (especially in this country), and its handling and stowage permit of the use of space before required for coal bunkers for other purposes.

As motors or engines operating on the Diesel cycle burn the fuel directly in the cylinders, the weight and space occupied by boilers are also available for other purposes, and the fuel can be carried in tanks or in the double bottom. Doing away with boilers also lessens materially the weight which must be devoted to machinery, and enables the designer to devote more space to the carrying of cargo or for use of the owner (in a yacht) of a given size, or permits the architect to design a smaller vessel for the same purposes, whether it be commercial or recreation. The percentage of such saving in size varies, of course, with the purpose for which the vessel is designed, but it is, roughly, from 10 to 15 per cent for similar services.

For yachts the Diesel motor has the additional advantage of cleanliness and safety; cleanliness as compared with coal and safety as compared with gasolene, as the oils used for fuel are low-test residuals having a very low flash point and being difficult to ignite except under high compression.

Another advantage of the Diesel as compared with steam is in the number of attendants required. The whole boiler room force is cut out, and the engine room force is also reduced, so that a Diesel engine can be run with approximately from 40 to 60 per cent of the crew required for a steam outfit of the same power.

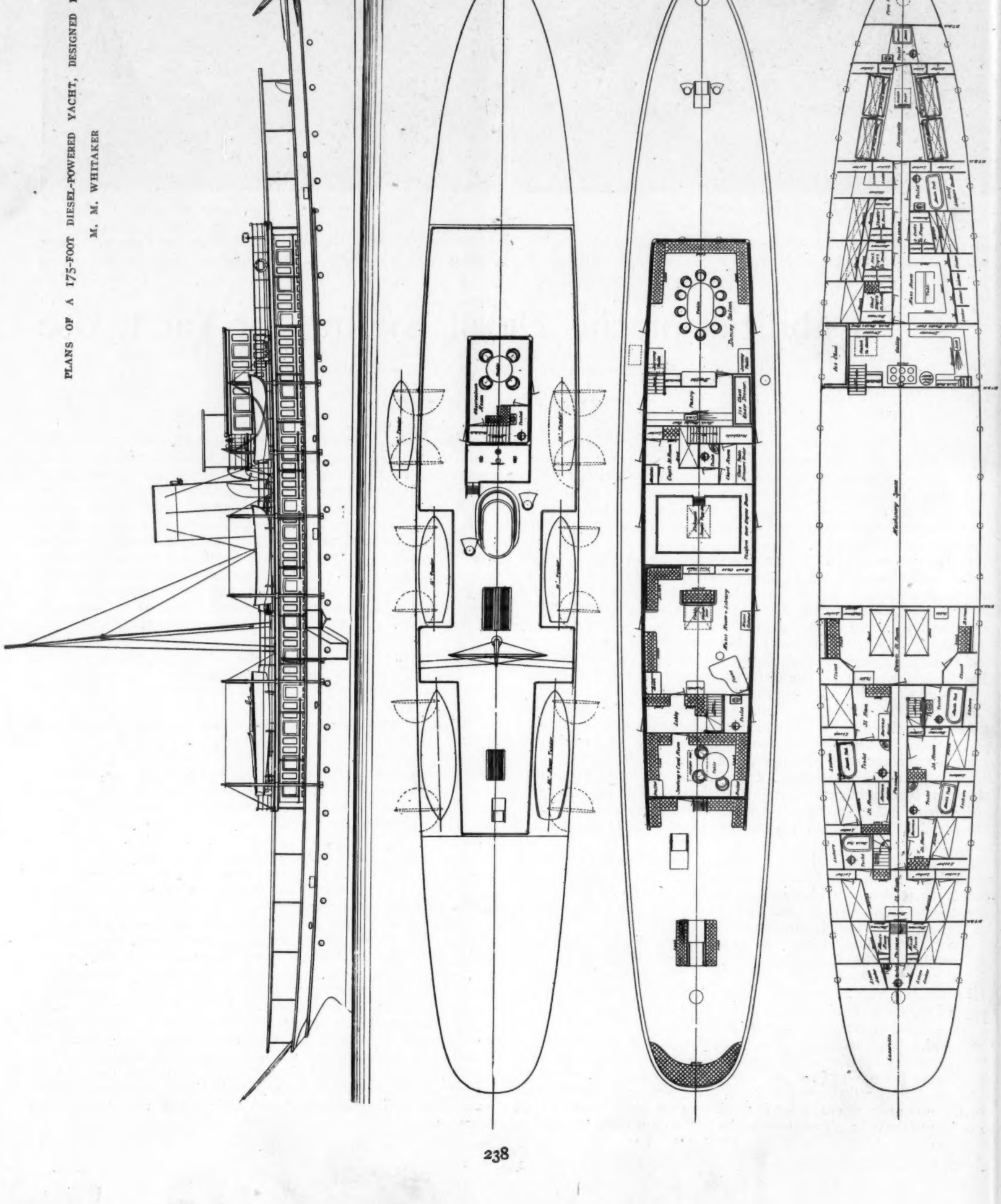
The Diesel is the most economical form of power producer yet invented. It gives approximately 38 per cent of the theoretical energy of the fuel in useful work, and a good Diesel motor will produce a horsepower for one hour on about one-half pound of fuel as against a little over a pound for gasolene, or against two or three pounds where steam is used. As the fuel for the Diesel can be purchased at from three and a half to five cents per gallon, as against the cost of sixteen to eighteen cents for gasolene, the operative horsepower developed per dollar of expense is from eight or nine to one in favor of the Diesel; and taking the average cost of coal as burned in yachts about ten to four or six.

In Europe the Diesel has received much more attention on the part of ship and yacht owners than in this country, and has reached a higher state of development. In commercial lines, up to the beginning of this year, there were in use abroad thirty motor vessels of a deadweight carrying capacity of 142,000 tons, and the motors of these vessels aggregated 44,000 horsepower. There are on order abroad at present sixty motor vessels of a deadweight carrying capacity of 237,000 tons and with 90,000 horsepower. This gives an idea of the volume of tonnage for Diesel engine vessels devoted to commerce. In yachts there are quite a number, but figures in regard to them are not available. At an exhibition at Milan, held about a year ago, sixteen different manufacturers of this type of motor exhibited their goods.

These figures give an idea to what extent the Diesel has received recognition abroad. Our manufacturers are just beginning to seriously consider it, and a few have entered upon its manufacture; but like all new devices it has to make its way against a vested interest, and the path of its advancement is by no means strewn with roses, for those manufacturers whose business the Diesel would interfere with are quick to point out its disadvantages.

Briefly stated, its disadvantages lie in the following points: First of all, cost, due to the necessity of high compression in order to burn heavy fuel oils, and care in choice of materials and manufacture to secure satisfactory operation. In cost to-day the Diesel is a little higher than a good compound engine with boilers and complete outfit, but I doubt, seriously, if it is any more expensive than a high-class triple-expansion engine with its outfit, such as one would naturally expect to see in a fine yacht. The excess of cost in machinery, however, is pretty well balanced by the decrease in cost of the hull of the vessel in which it is to be used, for the hull can be appreciably smaller for the same purpose as a steam-driven craft. Another point which has been urged against the Diesel is the high pressure of air necessary for starting and fuel injection purposes. This air is carried in steel bottles under a pressure of about 1,000 to 1,100 pounds, but this pressure presents no serious engineering difficulties which have not already been overcome.

PLANS OF A 175-FOOT DIESEL-POWERED YACHT, DESIGNED BY M. M. WHITAKER



As another advantage of the Diesel one might cite the extension of the cruising radius of any boat so equipped. As the Diesel only burns one-half pound fuel per horsepower-hour as against approximately one pound of gasolene, the cruising radius of any boat is practically doubled on the same fuel tank capacity. This is a very important matter to owners who desire to use their boats extensively.

As an example of the possibilities of a vessel of this type, the writer has recently drawn plans for a 175-foot yacht for a gentleman interested in the development of the Diesel engine. As the design is worked out this vessel could be equipped with motors of from 600 to 1,200 horsepower, and as it would have double bottom for storing the fuel the under-deck space inside the hull is available for living quarters and storage of provisions, water, etc.

The over-all dimensions are 175 feet by 25 feet, with a waterline length of 168 feet, which will make it the largest motor-driven yacht yet designed or put under construction. The draft, with half supply of fuel and water aboard, will be 9 feet, and with tanks filled and water and provisions for a long cruise the draft will be 10 feet.

With engines of 600 horsepower the speed would be about 14 miles maximum and 12 miles cruising, and with 1,200 horsepower the speed would be 18 miles an hour maximum and 16 cruising. There would be sufficient capacity for fuel storage for a cruising radius of 4,000 miles with the smaller power and about 2,500 miles with the larger power. Auxiliary machinery would consist of a heavy oil engine of sufficient capacity to supply the electric lights and power for hoisting anchors and handling the boats, and also an air compressor for starting and reversing purposes. Heat would be supplied for the cabins by hot water system, and an electrically-operated refrigerating plant would also be supplied. The hull throughout is of steel, including the deck house.

The interior arrangement is worked out to give comfortable and convenient accommodation for the owner and guests, the sleeping accommodation being all on the lower deck aft, with owner's stateroom at the forward end of the living quarters, separated from the engine space by double sound-excluding bulkheads. These accommodations consist of a large double stateroom for the owner with bath adjoining, four double staterooms each with bath and toilet between, another large stateroom with bath adjoining at stern, and quarters for two maids in the afterpeak compartment. Access to these quarters is obtained through the lobby on the main deck and through a separate companion just aft of the deck house on the main deck.

The quarters in the deck house consist of a music room and library immediately adjoining the engine room skylight. The music room is supplied with piano, Victrola, fireplace, bookcases, desk, etc., and is entered either from the deck or through a lobby between the music room and the smoking or card room, which is at the after end of the deck house. The smoking room looks out onto the after deck through an enclosed deck shelter.

At the forward end of the deck house is the captain's stateroom, which can be entered either from the deck or through the chart room. Immediately forward of the chart room are stairs leading to an observation room on the boat deck, and forward of this is the pantry connected by dumb-waiter and stairs to the galley on the main deck below. The dining room adjoins the pantry, and is located at the forward end of the deck house, where it will be possible to get a good view forward and on each side.

The vessel will be handled from a bridge immediately abaft of the observation room on the boat deck. The boat equipment consists of a 20-foot power tender, 20-foot whaleboat, two 16-foot and two 14-foot rowing boats.

The crew's quarters are all on the lower deck forward of the galley. This arrangement is adopted so that it is possible to serve the crew direct from the galley without the necessity of carrying the food over the deck, which must be done in yachts where the galley is located in the deck house. The crew's quarters consist of four staterooms for the officers, with mess room and toilet attached, and are separated from the forecastle by a watertight bulkhead with a watertight door leading into the passage. The forecastle gives accommodation for eight men, with toilet and shower bath.

A 102-Year-Old Auxiliary

ONE of the anachronisms of our times came to light the other day in the recent fitting of a cargo boat 102 years old with a gasolene motor for auxiliary power. Most boats go to the marine graveyard before reaching one-third of that age, yet this vessel, built almost before the days of steam for marine use, was in good enough condition to warrant her owners in installing a 30-horsepower heavy oil engine late last year.

The boat is the English ketch Ceres, 65 feet long, with a carrying capacity of 85 tons. She is owned in North Cornwall, England, and so successful has she been in her changed condition that she has made three round trips and discharged three cargoes between various ports in South Wales and Cornwall in three weeks, while other ships of her class, without auxiliary power, made but one trip. The internal combustion engine undoubtedly has a field in the smaller classes of merchant sailing vessels that has not been adequately worked.

Racing Ethics

To brag little,
To show well,
To crow gently if in luck,
To pay up, to own up,
And to shut up if beaten,
Are the virtues of a sporting man. —O. W. HOLMES.

Some yacht racing skippers would do well to paste this in their hats.

SOME RECENT YACHT SALES

Messrs. Tams, Lemoine & Crane report an unusually active market for the sale of yachts for this time of the year. The following recent sales and charters are reported by them:

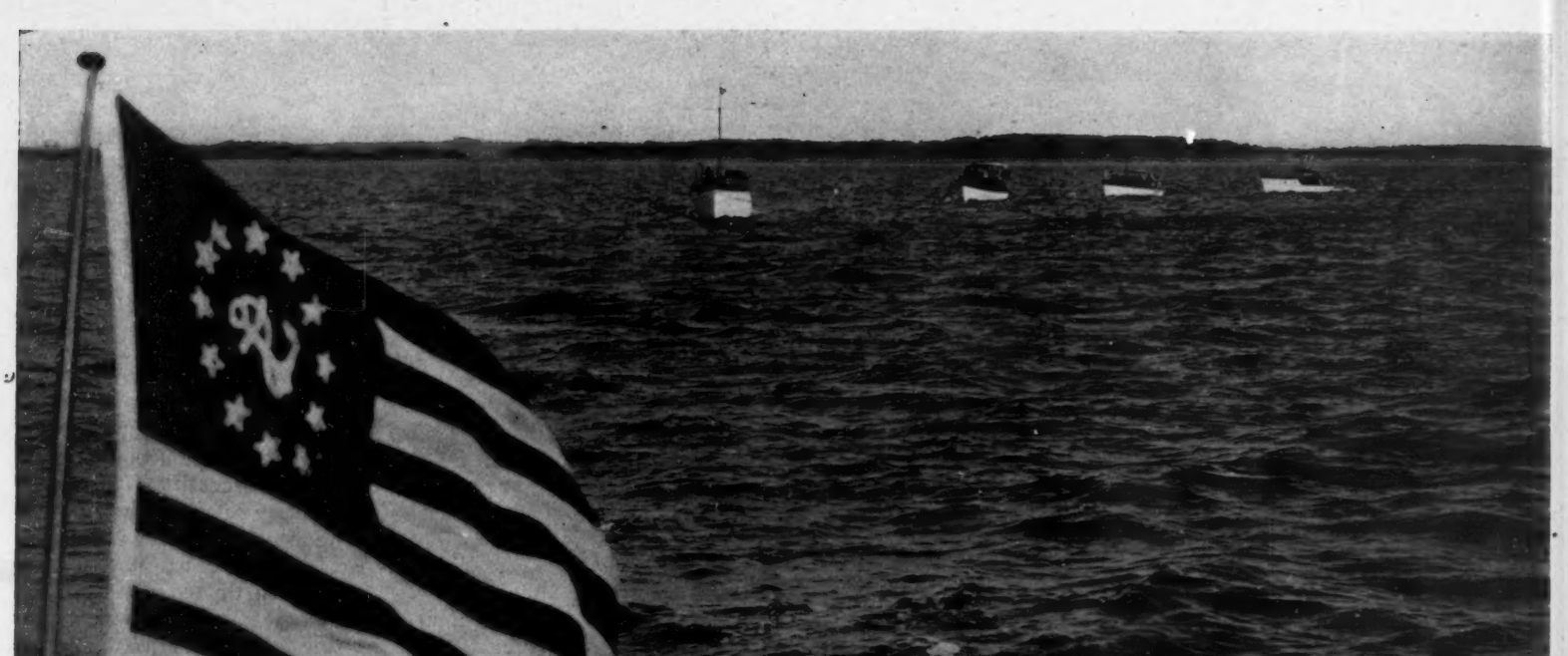
The houseboat Lanai, Commodore Arthur Curtiss James, has been chartered to Sherwood Aldrich for fishing and shooting on the east coast of Florida; the twin screw, 120-foot steel motor yacht Alacrity has been chartered for Mr. W. A. Bradford to Mr. Joseph M. Macdonough, both of the New York Y. C.; the 650-ton steam yacht Catania has been chartered for the Duke of Sutherland to Count Szechenyi; the 200-foot English built steam yacht Surf has been chartered for Mr. John H. Hanan, of New York, to T. L. Chadbourne; the fast twin screw motor yacht Alfredine IV has been chartered to Mr. W. Earl Dodge, of the New York Yacht Club. She will be used as a tender to the Samurai next summer for coastwise cruising. The 30-foot sloop yacht Alyce has been sold for Mr. G. Bramfuehr to Mr. J. S. Morgan. The Class Q racing sloop Soya, several times winner of the Gravesend championship, has been sold for Mr. W. A. Barstow to Mr. A. S. Henry. The boat will be raced at Wilmington this season. Mr. Vincent Astor has purchased from the Herreshoff Mfg. Co. a new 30-foot oil-burning launch, which he is going to use as a tender for his steam yacht Noma.

The Frank Bowne Jones Agency reports the following sales:

The 135-foot steam yacht Cavalier, for Chas. E. Proctor to Commodore William Hamlin Childs, of Indian Harbor Yacht Club; the 70-foot gasolene yacht Joyous, sold for William Hamlin Childs to Herbert G. Wylie; the 60-foot gasolene cruiser As You Like It, sold for estate of W. R. Martin to Cortez Oil Company; the 50-foot gasolene cruiser Natawa, sold for estate of Charles McLoughlin to F. C. Henderson, of New York; the 50-foot power houseboat Owanee, for E. C. Allen to P. L. Atherton, of Louisville; the 40-foot gasolene launch Dorothy, sold for George Boles to C. K. MacFadden; the 40-foot waterline sloop Alice, for C. K. Cummings to Dr. Charles B. Keeler, of Darien, Conn.; the 18-foot waterline knockabout Ogeemah, sold for H. B. Shaen to D. E. Dealy, of New Rochelle.

Cox & Stevens have sold the following:

The 100-foot twin screw cruising gasolene yacht Paula, for Commodore J. Stuart Blackton, Atlantic Yacht Club, to Daniel W. Smith, of Detroit, Mich.; the 70-foot twin screw houseboat Cocopomelo, sold for William Disston, of Philadelphia, to Benedict Crowell, of Cleveland; the 70-foot overall schooner Simitar, sold for William J. Baxter, Larchmont Yacht Club, to Henry D. Whiton, of New York; the 70-foot motor yacht Najelda, sold for Nathan Emanuel, of Brunswick, Ga., to Capt. F. P. Barry, of St. Augustine, Fla.; the 55-foot high speed auto boat Corcyra, sold for Vincent Astor, New York Yacht Club, to Livingston Beekman, New York Yacht Club.



FOLLOWING THE FLAG. FLEET EVOLUTIONS OF THE BOSTON POWER BOAT SQUADRON

Class "R" Boats for Seattle's Lipton Cup

SATISFACTORY rules and regulations governing the races for the Lipton Cup, presented to the Seattle Yacht Club last year by Sir Thomas Lipton, have been formulated and preparations are being made for two challengers from the Canadian side. The competing yachts will rate in Class "R" of the Universal Rule, under the conditions of the Long Island Sound Yacht Racing Association, but with 10 per cent added to their scantling restrictions. The races will be of an inter-club, as well as international character. Each of the recognized yacht clubs on the coast will be allowed one entry. In the event of there being a class of these boats in any one club, they will have a series of elimination races to decide the most suitable boat for their challenger.

Commodore B. T. Rogers, of the Royal Vancouver Yacht Club, is having a challenger built from designs by E. B. Schock, of Vancouver, and is placing her in the hands of the Club to be raced by a picked crew. There are several other boats in the Vancouver fleet that will rate in this class, and, though not built to that rule, should be able to give a good account of themselves under certain weather conditions, and will be good trial horses for the new boat. The Royal Victoria Yacht Club also has the money subscribed for a challenger. Seattle's defender will likely be from the designs of "Ted" Geary, on whom the Seattle yachtsmen have pinned their faith in more than one international contest. There is even talk of Seattle having two boats built. Other yacht clubs on Puget Sound are also talking of boats in this class. The actual date for the race has not yet been set, but is expected to be during the month of July.

This is the first class of yachts built on the northwest coast to the Universal Rule. With the heavy scantling restrictions these boats will make fair little cruisers when not engaged in racing.

Power Boat Squadron News

THE machinery necessary for the proper operation of the United States Power Boat Squadron, which has recently been formed, is gradually being assembled and put into proper working order, and, with the application of the necessary lubrication, will soon be a smooth-running power plant.

The following clubs or associations, twenty in number, joined the National Association at the last general meeting and signified their intention of forming local squadrons, as was told in the last issue of YACHTING:

The Yachtsmen's Club, of Philadelphia; Power Boat Squadron, of New Haven, Conn; Larchmont Yacht Club, Atlantic Yacht Club, Corinthian Yacht Club, of Philadelphia; Rhode Island Yacht Club, New York Motor Boat Club, Hudson River Power Squadron, Lynn Yacht Club, Knickerbocker Yacht Club, Harlem Yacht Club, Portland Yacht Club, Savin Hill Yacht Club, Kennebec Yacht Club, Hudson River Yacht Racing Association, Sachem's Head Yacht Club, Seawanhaka Corinthian Yacht Club, Indian Harbor Yacht Club, Boston Yacht Club Power Squadron.

The governing board of the National Squadron will consist of five elective officers and four members at large, not necessarily delegates, and a naval officer ex officio to be detailed by the Navy Department. No two delegates at large should be elected from the same geographical district, as hereinafter provided, if four or more geographical districts be entitled to representation.

Only members of a recognized American Yacht Club, Motor Boat Club or group of said clubs owning power boats and interested in power boating will be eligible for membership in local squadrons or to form squadrons. Members of local squadrons shall consist only of those who have satisfactorily passed the examination of a board of instruction and examination and have been awarded a certificate.

Examining Boards

Boards of instruction and examination will be formed, consisting of three members, one of whom, if possible, shall hold a pilot's license, each board to be under the supervision and guidance of a naval officer in its district. There shall be a board of instruction and examination for geographical districts as follows:

Coast of Maine and New Hampshire, coast of Massachusetts and Rhode Island, Rhode Island and Connecticut line to Hell Gate, Hell Gate to Sandy Hook (except Hudson River), Hudson River, Sandy Hook to Cape Henry, the Great Lakes and such other districts as may be necessary.

Harmsworth Trophy—Elimination Races

THE dates of the elimination races for the Harmsworth Cup, at which the American team will be selected to go to England to try to recover the British International Trophy, have been fixed from Aug. 1 to 8, at Chicago. The dates selected are excellent, in that they give a longer time to get boats in shape for this important event than was the case last year, when the races were held fairly early in the season, and practically only one

boat was ready. This year several boats are already built, or are under way, with the Harmsworth Cup race in view, and the elimination races at Chicago should show faster speed than heretofore seen in this country. The race will be started off the Chicago Yacht Club, and will be over a 30-mile course. The event ought to bring out a good-sized entry list. Mr. Sheldon Clark is the chairman of the Regatta Committee.

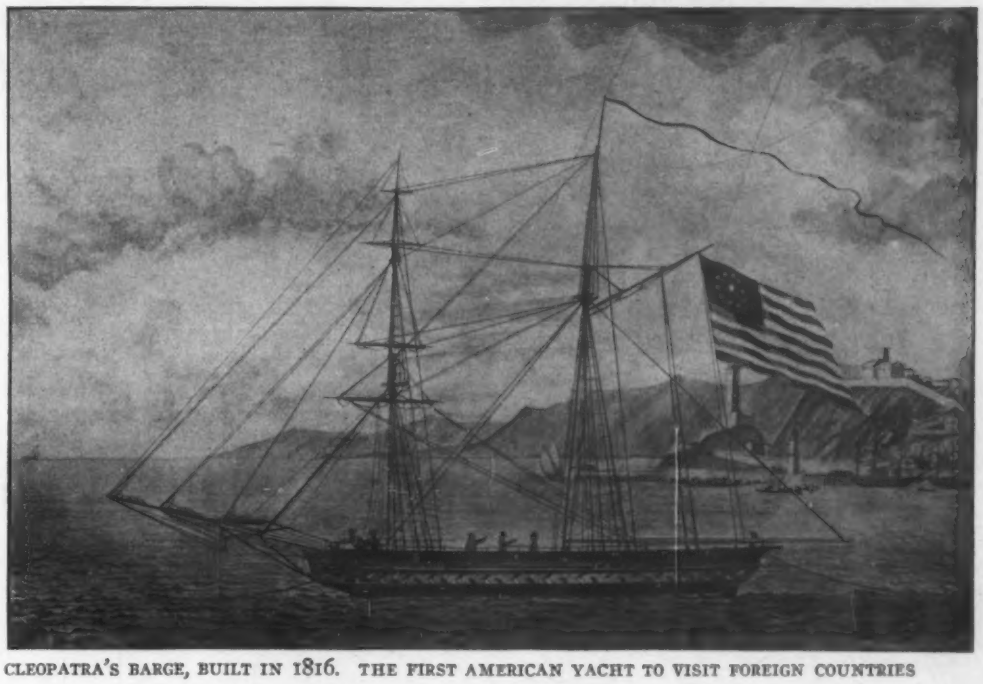
Commodore James A. Pugh, of Chicago, is building a new Disturber for this event, though very little definite news has been given out concerning her. It is said that she will be 30 feet long over all, with specially built engines developing over 1,000 horsepower. This is "some power," and may be a little wide of the mark. It is also said that Mr. H. H. Timken will have a new Kitty Hawk for this event.

But little definite news has come from England so far about new boats for the defense of the trophy. Maple Leaf IV last year had a speed that has not been equaled for the distance in this country. This wonderful boat that has now won two years in succession is again available, and it is said that a new boat is being built which is expected to be even faster.

The First American Sea-Going Yacht

ONE hundred years ago but little thought was given in this country to sailing for pleasure. People were too busy developing the resources of the country and building up a merchant marine to turn their thoughts toward a milder form of seagoing, yachting.

Yet it was this period (1816) that saw the first American sea-going yacht built, and the following year marked the visit of the first American yacht to European countries. The name of this boat, Cleopatra's Barge, is probably known to every yachtsman, though to most the knowledge consists of a few rather hazy facts of more or less doubtful authenticity that they have stumbled across at some time or another. All of this besetting fog has now been swept aside and a complete story of this interesting vessel is told for the first time by Mr. Frank Crowninshield in a book recently published and entitled "The Story of George Crowninshield's Yacht, Cleopatra's Barge." This boat has often been spoken of as the first American yacht. This is not a true statement, for Mr. Crowninshield says that a boat called the Jefferson, of 22 tons, and belonging to the Crowninshield family, was built for a yacht and antedated the barge by fifteen years.



CLEOPATRA'S BARGE, BUILT IN 1816. THE FIRST AMERICAN YACHT TO VISIT FOREIGN COUNTRIES

George Crowninshield, who built the Cleopatra's Barge in 1816, was a member of a family of prosperous merchant sailors who had built up a fortune in trade with China and the East Indies. He was one of five brothers, and, as was usual in counting houses in those days, it was considered necessary that he learn the business from the keelson up by going to sea. This he did at a tender age and became master of one of the firm's ships before he was twenty. In spite of the hardships of a sailor's life in those days, he quitted the quarter deck for the counting house with a genuine love of the sea, and, when in middle life he was left by the dissolving of the Crowninshield firm in 1809 with a private fortune and plenty of time on his hands, he decided to build a yacht to gratify his taste for ocean cruising. This boat was the Cleopatra's Barge, a hermaphrodite brig of 83 feet water line length, finished and furnished in most luxuriant fashion, and fitted as a small man-o'-war with main deck guns in the usual style of the period. Strange as the name sounds to-day, she came near having an even stranger one, for she was to have been christened Car of Concordia, and it was some time before her eccentric owner could decide between the two. The vessel was built by Retire Becket, a famous shipbuilder of Salem. So rapidly did the fame of this wonderful boat spread and so great was the interest in her that her hospitable owner was forced to keep open house aboard of her, and it is recorded that as many as 4,000 people visited her in the space of one twenty-four hours, and on another occasion that 1,900 ladies visited her in the course of a single day.

The cruise lasted from March to October, 1817, and during it calls were made at the Azores, Madeira, Gibraltar and at many of the Mediterranean ports. A romance attaching to this cruise would have it that the object of the voyage was the rescue of Napoleon Bonaparte from the Island of St. Helena, where he had been consigned two years before; but beyond the fact that her owner was in close touch with Napoleon's family in Italy and that some French officers came back to America on the vessel there seems to be no foundation for the report. The book is made up, first, of an account of Captain George, as he was called, and of the vessel, with numerous letters written by and to her owner prior to the commencement of the cruise; second, of abstracts from the log of the Barge on her voyage, and, third, of the private journal of Benjamin Crowninshield, Jr., "Philosopher Ben," as he was called, which contains a pretty full account of the doings both aboard and ashore.

This "young" Ben was taken along as a guest, probably on account of his literary ability. He must have had somewhat of a crabbed disposition, judging from the many sarcastic remarks that his letters contain. He was also a navigator, having studied the art under Bowditch, the great mathematician, and the Cleopatra's Barge was one of the first vessels to be navigated across the Atlantic by lunar observations taken for longitude. An interesting bit of the book touching on this point is an account by the Baron de Zach, a celebrated astronomist, describing a visit he made aboard the yacht at Genoa. It is as follows:

"How does it happen that the Commanders of French vessels, with 34 schools of hydrography established in the Kingdom, either know not, or do not wish to know, how to calculate the longitude of their vessels by Lunar distances, while even the cooks and negroes of American vessels understand it?

"Agreeably to my promise, I will now relate what once I witnessed on board an American vessel, the Cleopatra's Barge, which arrived in the month of July, 1817, at the Port of Genoa, from Salem, one of the handsomest towns in the State of Massachusetts, U. S. A., Lat. 42° 35′ 20″ N., Long. 73° 9′ 30″ W. All the city crowded to see this magnificent palace of Neptune; more than 20,000 persons had visited this superb floating palace, and were astonished at its beauty, luxury and magnificence. I went among the others. The owner was on board; he is a gentleman

of fortune of Salem, who had amassed great riches during the late war with Great Britain. * * *

"In making some inquiries respecting my friends and correspondents in Philadelphia and Boston, among others I mentioned Dr. Bowditch. 'He is a friend of our family, and our neighbour in Salem,' replied the old captain. 'My son, whom you see there, was his pupil; it is properly he and not myself that navigates this vessel; question him and see if he has profited by his instructions.'

"I observed to this young man, 'You have had so excellent a teacher in Hydrography that you cannot fail of being acquainted with the science. In making Gibraltar what was the error in your longitude?' The young man replied, 'Six miles.' 'Your calculations were then very correct; how did you keep your ship's accounts?' 'By chronometers and by Lunar observations.' 'Can you then ascertain your longitude by Lunar distances?' Here my young friend, appearing to be offended by my question, replied with some warmth: 'What, I know how to calculate Lunar distances? Our cook can do that!'

"Here Mr. Crowninshield and the old captain assured me that the cook on board could calculate longitude quite well; that his taste for it frequently led him to do it. 'That is he,' said the young man, pointing to a negro in the after part of the vessel with a white apron round his waist, a fowl in one hand, and a carving knife in the other. 'Come here, John,' said the old captain to him. 'This gentleman is surprised that you understand Lunar observations. Answer his questions.' I asked, 'By what methods do you calculate Lunar distances?' The cook answered: 'It is immaterial. I use sometimes the method of Maskelyne, Lyons, Witchel, or Bowditch, but I prefer that of Dunthorne, as I am more accustomed to it.'

"I could hardly express my surprise at hearing that black face answer in such a manner, with a bloody fowl and carving knife in his hands. 'Go,' said Mr. Crowninshield, 'lay aside your fowl and bring your books and journal and show your calculations to the gentleman.' The cook returned with his books under his arms, consisting of Bowditch's Practical Navigator, Maskelyne's Requisite Tables, Hutton's Logarithms, and the Nautical Almanac abridged from the Greenwich Edition. I saw all the calculations this negro had made on the passage of latitude, longitude, apparent time, etc. He replied to all my questions with admirable precision, not merely in the phrases of a cook, but in correct nautical language. This cook had sailed as cabin-boy with Captain Cook in his last voyage round the world, and was acquainted with several facts relating to the assassination of that celebrated navigator at Owyhee, February, 1779."

Arriving home in October, 1817, Captain George Crowninshield died suddenly on board about a month afterwards, the vessel being used as his permanent home at the time. After he died the famous vessel was sold as a merchantman, made several voyages in American waters and then went around Cape Horn to the Sandwich Islands, where she again became a yacht by being sold to the King of those islands. She was wrecked on a reef in the archipelago in 1821, and thus was cut short after five years the career of a vessel that may be considered as the forerunner of the great fleet of pleasure boats of to-day.

The book is gotten up in the most elaborate fashion, with numerous illustrations of Cleopatra's Barge, of the various ports visited painted by a "talented artist on board," who is suspected of being one of the negro cooks or stewards, and of other vessels belonging to the Crowninshield firm. It is a book that can be commended to every real yachtsman.

The Engine Foundation

POOR installation is without doubt the cause of more engine trouble and difficulty in getting them to operate properly than any other thing, and engine manufacturers are often "bawled out" by owners for faults which are not the engine's, but are due in a large measure to installation. This is particularly the case with engines that are being installed in old boats, in auxiliaries, or where engines are being replaced by those of a different size or make.

A particularly flagrant case of this trouble was brought to my attention last summer in a heavily-built sloop, which had a 2-cylinder, 12-horsepower motor installed as auxiliary. The bed logs were only 1½ inches thick, were very short and did not extend forward of the flywheel, with practically no bracing at the floors. This resulted in so much vibration that it was impossible to keep the lag screws down tight. The reverse gear was nearly ½ inch out of alignment, and consequently the engine stalled every time the clutch was thrown in except when running at full speed, causing a large loss in the power developed.

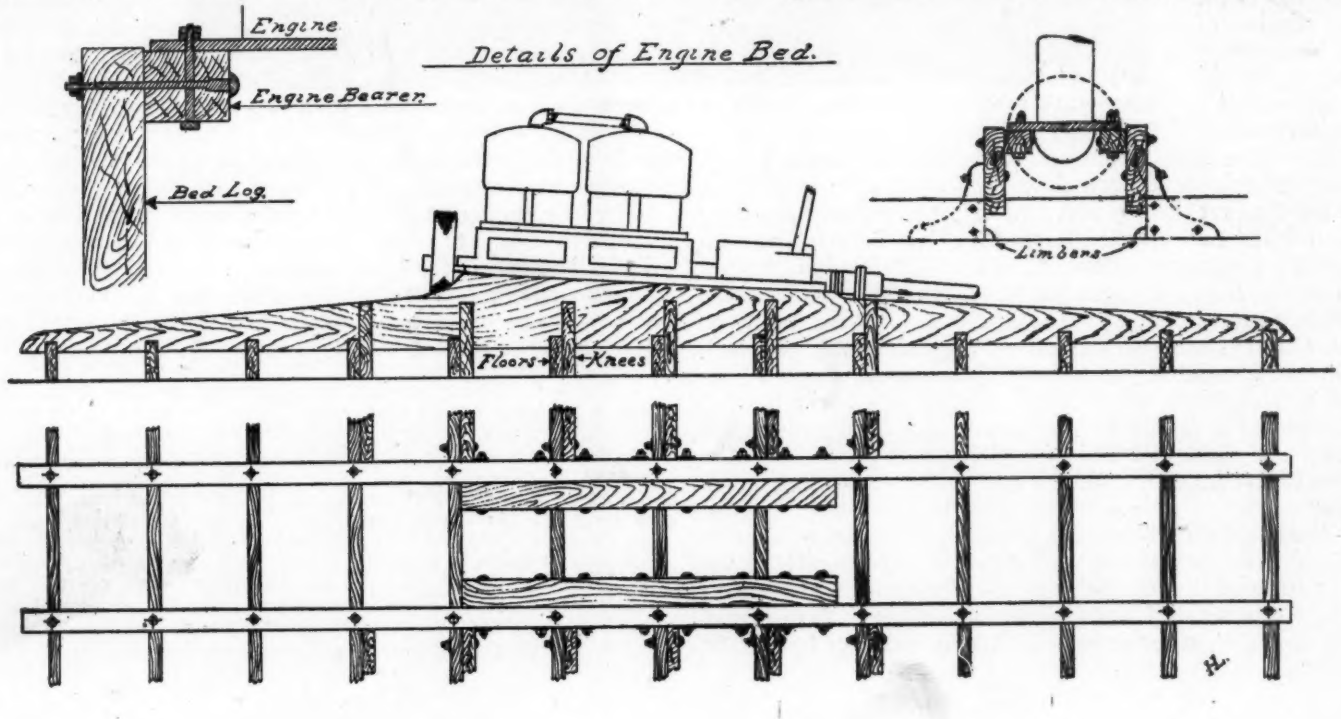
A weak, poorly-constructed foundation is the principal cause of excessive vibration, and this sooner or later leads to troublesome leaks. Owing to the lateral vibration, the garboards will in a short time open up and "weep." Floors are usually too light, the bed logs are too short and lack proper bracing.

Floors should be of oak and extra heavy about the engine space. Natural crooks extending well up the bilges are preferable where, of necessity, the engine bearers are short. The bed logs must be long enough to notch over a number of these floors and be bolted securely to them, and should extend forward of the flywheel where possible, except in small engines of 5 horsepower or less. A number of athwartship oak knees should be fitted and well bolted or riveted, binding the floors and bed logs together. A good material for long bed stringers is yellow pine, for this wood stays true better than oak.

The amateur builder frequently finds it a hard problem to extend the bed stringers forward of the flywheel owing to its diameter being usually equal to or greater than the width of the base.

The drawings herewith show a simple method of overcoming this difficulty, which has the additional advantage that the engine may be lined up true without the use of shims, which are always unsatisfactory.

An engine installed in a boat while blocked up on shore usually



EFFECT OF THE FEBRUARY GALES ON THE WESTERN OCEAN. THERE WOULD BE A FINE CHANCE TO GET THIS LIFEBOAT OUT IN CASE OF NEED.

has to be relined when the boat is afloat owing to the different strains set up while on the stocks. In the method shown here the engine bearers may be held in place by clamps if the engine is not too heavy, or in the latter case by blocking and wedges, until the boat is in the water, when perfect alignment is an easy matter. The bearers are then securely bolted to the bed logs, as shown, care being taken to see that these bolts do not interfere with those used to hold the engine in place. Another good feature in this construction is that through bolts may be used to hold the engine down in place, eliminating the use of lag screws, which are unsatisfactory. It also allows of quicker removal of the engine when desired. It is a good plan to use two nuts on the bolts holding the engine down, as one locks the other, preventing the engine from working loose on the bed.

Dimensions in the drawings have been purposely omitted, for they must of necessity vary considerably with the type of boat, power and make of engine installed. It is not so much the size and weight of material used as the proper distribution and bracing that is important. Use plenty of fastening. This design is not recommended for extremely heavy installations, but for engines under 20 horsepower can be used to advantage when a long bearer is desired for strength. H. W. LOWEREE.

Ice Boating on Manhasset Bay

Manhasset Bay has had some good ice-boat racing during the latter part of the season, though the races were between local boats. A number of famous old-timers are now owned on Manhasset Bay, such as Jack Frost, Snow Flake, Cold Wave and others. The races sailed so far have resulted as follows:

FEBRUARY 22, 1914—350-FOOT CLASS—*Distance, 10 Miles*

Boat	Owner	Time
Jack Frost	J. O'Brien	22m. 15s.
Snow Flake	J. W. Alker	22m. 45s.
Manhasset	J. W. Alker-C. M. Gould	30m. 10s.
Whirlwind	W. B. Duncan	30m. 10s.
Knickerbocker	Hy Stevenson	Did not finish
Why	M. Vanderwall	Did not finish

FEBRUARY 28—HANDICAP CLASS

		Elapsed	Corrected
Jack Frost		19′ 8″	18′ 15″
Cold Wave	W. Gardner	19′ 15″	19′ 15″
Whirlwind		20′ 32″	20′ 22″
Knickerbocker		22′ 28″	22′ 28″

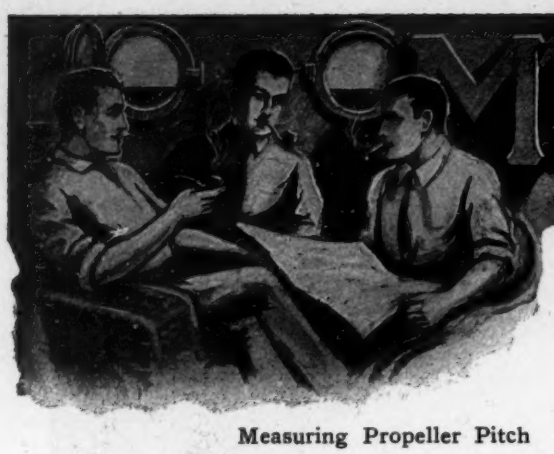
MARCH 8—HANDICAP CLASS

Cold Wave		18′ 15″	18′ 15″
Dilemma	J. Van Wicklen	19′ 45″	19′ 25″
Snow Flake		28′ 16″	27′ 56″
Jack Frost		Upset	

Poor Ice on the Shrewsbury

Ice-boating conditions on the Shrewsbury have not been very satisfactory this winter, owing, first, to lack of ice, and then to the ice being covered with snow. No boating was had until February 7 or 8. Two heats for the Challenge Pennant of the North and South Rivers have been sailed between Imp, Tyro, Ingenue and X. L. N. C., but, owing to the light wind, were not finished within the time limit.

Down at Red Bank a race was sailed for the Third Class Championship Pennant of America between the Red Bank Club and the Branchport Club. The Red Bank Club, who were the holders, successfully defended the trophy, with Imp and Tyro against the Hazel L. and Princeton.



Mess Room Talk

IN this Department we will answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered promptly by mail, and when of sufficient interest will be printed for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Address, Information Department, YACHTING, 141 W. 36th St., New York City.

Measuring Propeller Pitch

CHICAGO, ILL.

I have a three-bladed 24-inch propeller on my 32-foot motor boat, and can find no mark indicating the pitch. Can you tell me how I can find the pitch of the wheel? I do not know the maker's name, so cannot find out from him. C. C. K.

It is a comparatively simple matter to find the approximate pitch for a propeller wheel. It is usually customary to consider the pitch of the face or the forward side of the propeller only, although the form of the back is important. As a general proposition it may be stated that blades with a true helical face and rounded back have increasing axial pitch.

Since the pitch varies in the blade between the hub and the tip, if we measure the pitch angle at either end of the blade, or in the middle, the results would differ—the angle becoming finer as the tip is approached. In common practice, however, in a well-designed propeller there is a point at which the pitch angle may be taken that will be approximately the mean angle of the whole blade. This point is at two-thirds of the diameter,

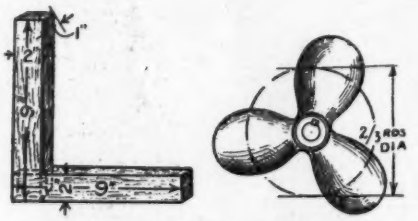


FIG. 1.—ON LEFT, WOOD SET SQUARE; ON RIGHT, SKETCH SHOWING PITCH CIRCLE OF PROPELLER

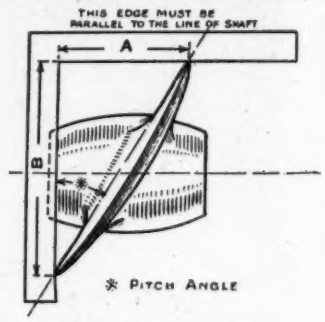


FIG. 2.—METHOD OF MEASURING TANGENT OF THE PITCH ANGLE

and it has been found by experience to be approximately the average angle of pitch in standard wheels where there is no radial increase in pitch. This two-thirds point is easily located, and should be marked on one of the blades with a pencil line drawn across the blade at right angles to the center line of blade.

The pitch angle, then, is the angle made by the blade with a line at right angles to the center line of the hub. The most convenient way to measure it is by finding its tangent. To do this a piece of wood should be cut to the shape shown in Fig. 1, and with this held in the correct position, as shown in Fig. 2, the points of contact between the edges of the blades and the sides of the set square may be marked off. One of the two measurements is called A and the other B, and the tangent is found by dividing A by B. The formula for finding the pitch reads as follows:

$$P = \frac{\pi \, 2/3 \, D \times A}{B}.$$

Where D is the diameter of the propeller, A equals the projected width of the blade parallel with the shafting at two-thirds the diameter, and B equals the distance across the blade at two-thirds of the diameter taken at right angles to the line of shafting. The cuts are from the English *Motor Ship and Motor Boat.*

It is easy to increase the pitch of a propeller by twisting the blades; as the angle of the helix is smaller near the tip an increase of pitch made by twisting consequently has a larger effect near the tip and gives increasing radial pitch. For this reason it is undesirable to *decrease* pitch by twisting a blade the other way. This should be borne in mind in adjusting blades.

Sail for a 16-Foot "Cat"

CHICAGO, ILL.

I have a 16-foot overall catboat, 5 feet beam. Will a 165 square foot sail be too large for her on Lake Michigan? What is the proper size of centerboard? Could I use a small jib to any advantage and just what way would it help? Where can I obtain copy of Government regulations regarding small boats? L. A. E.

You do not say what the waterline length of your catboat is, but if she is only 5 feet beam she must be something less than 16 feet on the water. Five feet is very narrow for a 16-foot catboat, and 165 feet of sail is more than most boats of that size carry. I should say from 125 to 135 feet would be sufficient, though of course I cannot say definitely without knowing something about the shape of the boat.

I should say that a proper sized centerboard for boat of this length would be about 3 feet long by 20 to 24 inches deep.

You can use a small jib on a catboat, but if the boat is properly balanced without it, you will not gain much by carrying one, and it would be so small that it would only be a nuisance, without having enough power to help her any. If the boat carries a strong weather helm a jib might help to keep her off.

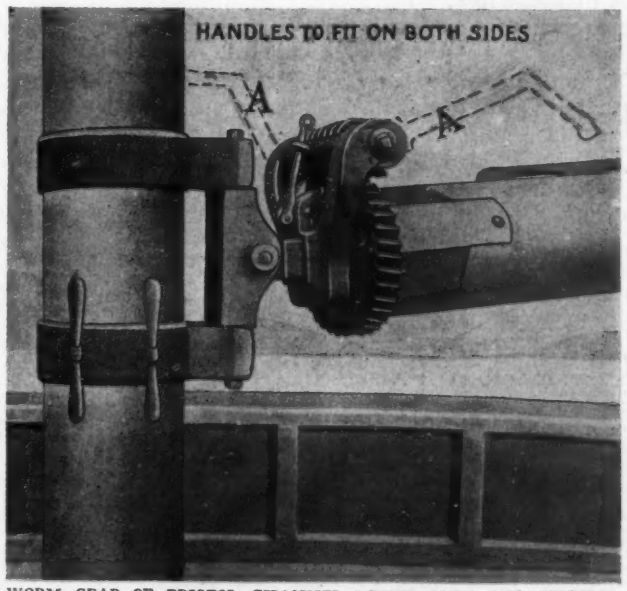
There are no specific Government regulations concerning small sail boats, other than the regular pilot rules, containing rules of the road, sailing lights, and so forth. This can be had from the nearest supervising inspector of vessels.

Roller Reefing Gear

LOWELL, MASS.

I am going to change a cutter I have into an auxiliary ketch, and want to equip her with the reefing rig used on the Bristol Channel pilot cutters. It is the simplest and most efficient gear I know of. While I remember it pretty well and can work it out I would rather have the rigging that the pilot boats use. The worm at the gooseneck is in mesh with the gear wheel, which is fixed to the boom, and as the lever or handle is turned the worm revolves and rolls the sail up. I do not remember just how this gear wheel is connected with the gooseneck. This was illustrated in the *English Yachting Monthly* some years ago. Perhaps you could give me a rough sketch showing the arrangement I have described. I would like to have it just as on the pilot cutters, as these boats are wonderfully efficient, and are the greatest "one-man" boats in the world, the pilot's "cub" taking the boat back into port as best he can after the pilot has been put aboard a ship. It is said that one can go forward, slack the halyards, roll the sail up to what they want, and get back to the helm in one or two minutes, which cannot be done on any other rig. B. B. H.

We published in YACHTING last year a cut of the wheel and worm reefing gear used on the Bristol Channel pilot boats which will give you just the information that you want. You will see from this that the gear wheel on the boom fits into an iron socket in the frame which holds the worm. This frame is connected with the gooseneck in the usual way in which a boom is fastened to the gooseneck. This gear takes up a little



WORM GEAR OF BRISTOL CHANNEL ROLLER REEF AND METHOD ATTACHING TO GOOSENECK

more room than an ordinary gooseneck, and leaves a fairly wide space between mast and tack of sail. We also reproduce a photograph showing method of fastening main sheet and sheet blocks to boom so that the boom will turn easily.

Fastening Frames of V-Bottom Boat

AURORA, ILL.

I would like to know how the side and bottom frames of a V-bottom boat are fastened together where they meet at the knuckle. What kind of fastenings are used? Galvanized bolts or nails? Also, how is the planking fastened to the frames? Are the nails driven through the frames and riveted over burrs? In using cypress planking is it proper to bore a hole and put a plug over the head of the nail, or can the nail be driven in and puttied? B. S.

The knee where the two parts of the frame of a V-bottom boat meet should not be made to fit into the angle between the frames but should go *alongside* of the frames, flush with the outside edge, or, in other words, with the inside of the planking. The fastenings should then be put through this knee in a fore-and-aft direction into each part of the frames. Screws or galvanized iron fastenings riveted over burrs would answer.

In fastening the planks, the holes must first be bored for the fastenings, and the nails driven in from the outside and burred on the inside, unless it is screw-fastened, which is sometimes done. In very fine jobs, wooden plugs are usually put over the heads of the fastenings, otherwise the fastenings may be countersunk and puttied.

Propeller for Two-Cylinder Engine

ST. JOHN, N. B.

I have a three-port, double-cylinder engine, bore and stroke 3¾ inches by 3½ inches. She is supposed to turn up 500 revolutions per minute with a 16-inch wheel. What pitch would I want? My boat is 16-feet by 4½-foot dory stern. E. N. H.

I should judge that your engine develops about 4 horsepower at 500 revolutions, in which case, with a 16-inch wheel, she would need about 18 inches or 20 inches pitch. Probably, unless your engine is new, you are not getting quite 500 revolutions, in which case a 16-inch by 22-inch wheel would be about right.

METHOD OF ATTACHING MAIN SHEET BLOCKS TO BOOM IN ROLLER REEFING GEAR

Value of Brake-Test Table for Marine Engine

LOCKPORT, N. Y.

Having read your article, "Avoiding the Sham in Boats and Engines," in the January issue, I would like to submit to you a question as to guarantee of a motor which I am contemplating purchasing. What should be the proper method to pursue to get at the facts?

I asked of the A———— Engine Company for a brake-test card of their 30-horsepower, medium heavy-duty, 4½-inch by 6¼-inch motor. The following is the test card:

	Horsepower
450 revolutions per minute	27
500 " " "	30
550 " " "	32 2/3
600 " " "	34 2/7
640 " " "	35 1/3
740 " " "	39 3/4

Now the new rating under the American Power Boat Association rules gives this motor 23.85 horsepower. The percentage of increase of horsepower over the rating at 600 revolutions per minute is figured to give 43.3 per cent, if their guarantee is correct, and at 740 revolutions per minute 66.6 per cent above the American Power Boat Association rating.

I asked another reliable marine motor manufacturer to give me a criticism on this brake test, and he says as follows:

"Frankly, we do not believe it is possible for this engine to make good on the guarantee, and we have come to this conclusion, both from our own extensive testing of our own and other motors, and from a great mass of technical data which we have in our files, giving the actual power obtained under the very best conditions by the prominent automobile and marine engine builders in this and foreign countries. We believe that you will admit that the technical data prepared by the Society of Automobile Engineers is as accurate as any obtainable anywhere. Figuring from this formula we get a rating at 666 revolutions per minute (which is the revolution rating of the American Power Boat Association cruiser rating) of 24.6 horsepower. The A———— people claim 35.33 horsepower at 640 revolutions per minute, or almost 50 per cent greater than the Society of Automobile Engineers give as the reasonable power to be expected from a well-designed motor running under ordinary working conditions. Of course, on test blocks tests these ratings are exceeded at certain speeds, but the best the Packard people have ever been able to do varies between 20 and 25 per cent in excess of the S. A. E. rating. We believe that you can also concede that the Norway motor is one of the standard motors now built for automobile service, and the writer has before him some test curves of a 4½-inch by 5¼-inch Norway 4-cylinder motor, which shows an actual test block reading of 20.5 horsepower at 600 revolutions per minute. The S. A. E. rating on this motor at 600 revolutions per minute is 17 horsepower. Does it seem reasonable to you that the A———— people can actually get 34 horsepower at 600 revolutions per minute from their 4½-inch by 6¼-inch 4-cylinder motor? Taking now an illustration in the marine field, and choosing as an illustration the engine built by the S———— Motor Construction Company, whose product we believe has held as good a reputation as anyone in the business. You will find that they rate a 5-inch by 6½-inch 4-cylinder engine at 24 horsepower at 450 revolutions per minute, which you will note is 3 horsepower less

(*Cont. on page 263.*)

EDITORIAL

Taking Care of the Life Savers One of the most important arms of the Government in its relation to yachtsmen is that of the Life Saving Service, a department that maintains nearly 300 life saving stations along our coasts and Great Lakes.

The statistics for 1912 (the last report published) show that nearly 50 per cent of all the vessels aided by the Service during that year were pleasure craft. In that year 982 gasolene-propelled vessels were succored by the Department, this number being 57 per cent of all the marine casualties reported for the year. Out of this 982 some 817 were undocumented motor boats, most of them being pleasure vessels. On the 982 boats were 3,221 persons, or 45 per cent of the total number aboard all of the endangered vessels. These figures speak for themselves.

Valuable as this Department is, the Government has not yet seen fit to provide for those members of the Department who, after giving many years of their lives to the Service, are retired through age or disability. They are eligible to no pension fund, the pay is small, yet at the end of their service they are turned on the world with no provision for their maintenance. A single case that has come to our attention may be cited as typical. One of the captains of a station on the Great Lakes, who had served long and faithfully, was retired for old age, and would have left the Service almost penniless had not some public-spirited citizens in the vicinity made up a purse for him.

There is at present a bill pending before Congress providing for a pension fund for the life savers. It was reported favorably by the Senate on February 27. It is a bill that should have the hearty support of every man that follows the sea, either for a livelihood or for pleasure. Every yachtsman, whether or not he has ever been forced to call upon the Service for aid, should be heartily in favor of this bill. He should make it his duty to "boost" it by writing to his Congressman, asking his favorable consideration of the measure, which is known as S. Bill No. 2337.

When Is a Flying Boat? The question was frequently brought up, more or less jocularly, last year whether a flying boat should be classed as an aeroplane or as a water craft. The Department of Commerce has just stepped in and settled the status of these flying boats and hydro-aeroplanes. Its decision is that while navigating the water they are boats and come under the governing regulations of the Federal motor boat law. This being the case, hydroaeronauts must look out for the inspector. When he comes around, however, it should be an easy matter to take to the air, where the boat automatically becomes an aeroplane, and where as yet, the inspector would have some difficulty in following. This decision makes the craft exempt from State registration and control, as in the case of automobiles. Whether or not, in their present state, they will be forced to carry the full power-boat equipment, future rulings will determine.

Getting the Boys Interested Anything that will get the youngsters interested in boating and headed on a proper course in this age of moving pictures, automobiles and other 'long-shore attractions, is a good thing. Even if the boy's taste is toward the water, yet as they are brought up to-day they will not as a rule go to much effort to get what they want if it does not come to them easily. Therefore, such a movement as that of the Boy Scouts of America is doing a tremendous amount of good in keeping the boys interested in the great outdoors and the healthy life of the open.

The connection between this movement and yachting is easy to see. As a matter of fact, wherever water is available, the boys are encouraged to acquire a knowledge of boats and familiarity with the water. This interest in the sea is so fully recognized by those at the head of the movement that in certain localities the practice of "sea scouting" has been taken up. A Gloucester fishing schooner has been acquired by this arm of the movement in Boston and it is hoped that the practice of sea scouting will later be taken up on the lakes and rivers. The whole training that a boy gets as a scout tends to develop just those qualities that are necessary in a sailor—self-reliance, resourcefulness and courage. The movement is a good one from the standpoint of the boys, and instead of weaning them away from the water, it should quicken their interest in everything that is worth while out of doors, not the least important of which is boat handling.

The romance and glamour of the sea is still here. The call is just as strong in the boy as it was when youngsters used to run away from home to go to sea, and, if properly guided, the interest ought to be turned to good account in producing a future generation of sailors. May there be more strength to the movement.

Special Notice to the News Stand Buyers of YACHTING

IN the past we have given YACHTING a very wide distribution on the news-stands of the United States and Canada, at considerable expense, in order that no one who wanted a copy would have trouble in finding one at any time. This naturally caused considerable waste and difficulty in handling. After studying the matter carefully we believe that the interest of those readers who buy from the news-stands can be served just as well, and the waste eliminated, by making YACHTING Non-Returnable; that is, that the newsdealers will not have the privilege of returning unsold copies. Beginning with the June number this will be done.

This means that the newsdealer will only order the number that he sells normally. Most news-stand buyers, however, purchase from the same stand every month, and we would especially urge those who buy in this way to deal, as far as possible, with one man, **and place their orders for a copy with him each month.**

It is only fair to the dealer that you do this. He wants to sell you, and he wants to know that you will be a steady customer. It is an easy matter to advise him when you are buying your May number that you will also want the June number. Or, what is better, place a standing order for a copy each month. You will then be served promptly and satisfactorily.

Don't Miss the Summer Issues

The coming summer is going to be the most important from a yachting standpoint that we have ever seen. With the America's Cup races coming on, and three American boats racing for the honor of defending, every issue will be full of vital interest. The launchings and every race between these boats throughout the season will be fully covered in YACHTING. We have arranged for exclusive pictures of them, and you cannot afford to miss a single issue of the magazine.

Then, there is the Bermuda Power Boat Race, the International Motor Boat Race for the Harmsworth Cup, and many other important events, not one of which will get by YACHTING.

You want these numbers, then why not order them from your newsdealer NOW?

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PLYMOUTH-RIGGED MACHINE SLOOPS IN LEGIER CUP RACE FOR SOUTHERN CHAMPIONSHIP, 1913

One Thing They All Carry

WHEN every boat in the race is rigged with the same kind of rope, there must be a good reason.

Plymouth Yacht Rope is a favorite with racers and other craft alike. Besides extra strength, it has that superior finish and appearance which appeal so strongly to all skippers. In a class by itself.

Plymouth Yacht Rope

Imagine a line that combines the texture of silk with the toughness of leather and you have Plymouth Yacht Rope. Only the best of hand-picked Manila fiber goes into it. Our best men are assigned to make it. And the way it handles is a joy. Try it and see.

Now about ground-tackle — just read what follows.

For Motor Boats

Reliable anchor rodes and lines for towing and the like belong on every boat.

Plymouth Bolt Rope just suits for this work. Specially-selected fiber makes it so much stronger and more durable than ordinary Manila rope that you secure same service out of smaller sizes. Saves money, weight and space.

Our booklet, "Rope Hints For Boat Owners," gives right lengths and sizes of line for different craft. Tells about proper care of rope and other practical matters. Send for it.

PLYMOUTH CORDAGE COMPANY
NORTH PLYMOUTH, MASS.

Driftwood from Alongshore

Inter-Lake Yachting Association News

At the spring meeting of the Inter-Lake Yachting Association, held at the Toledo Yacht Club house, Saturday, March 7, Put-in-Bay was chosen for the 1914 regatta of the Association during the week of July 12-18. Put-in-Bay put up a $1,000 guarantee and that place was the uanimous choice. The officers of the club are planning to have a real old-fashioned sailing regatta, without any frills or feathers, but just a family reunion of the sailors of Lake Erie, Detroit River and St. Clair.

The new Swampscott one-design sailing-dory proposition was presented to the delegates by Mr. Bell, of the Detroit Yacht Club, and the class was adopted by the Association for one year under the class letter T. A special prize is to be put up for the class at the coming regatta.

Three new clubs were admitted to membership—the Lone Star Boat Club, Toledo; Vermilion Boat Club, Vermilion, and Cleveland Boat Club, Cleveland,were admitted to membership. This gives the I. L. Y. A. the largest number of constituent clubs in its history—twenty-two in number.

The chairmen of the various committees are as follows: Sailboat, Will Broor, Toledo Yacht Club, Toledo; power boat, Robert L. J. Wagar, Sandusky Yacht Club, Sandusky; entertainment, Frank Frey, Detroit Yacht Club, Detroit; other sports, A. W. Williams, Cleveland Yacht Club.

Cup Defenders to Go Overboard in May

It is still asserted that the America's Cup challenger, Shamrock IV, will be launched the latter part of April. On this side of the water the three defenders will not go overboard quite so soon. The Herreshoff boat is the farthest along, and will probably take the water the latter part of April, or not later than May 1. The Gardner boat, building at Lawley's, it is said, will be overboard and will be ready to have the mainsail bent on May 5, while May 11 is the date set for the launching of the Owen-designed boat building at Bath, Me. Arrangements are already being made to carry a large party from New York and Boston to the launching of the latter craft, which has been named the Defiance.

California Section Holds First A. P. B. A. Race

The official time for the Midwinter Cruiser Race, run under the new A. P. B. A. rule by the California Section on Feb. 23, 1914, follows. This race was run immediately after a severe storm, with the bay swollen by freshets, and during a strong ebb tide, which makes the apparent times of the boats very slow. The winner, Lizzie M, took 31 minutes longer to complete the course than she did over the same course last year, although running better than a year ago. Marylyn broke down from lack of gasolene, a petcock in the line being open and allowing all the gasolene to run into the bilge.

Boat	Owner	R'ting	H'dicap	Start	Finish	Elapse
Lizzie M.,	L. Evans.....	41.6	32:32	12:26:18	4:00:45	3:34:27
Rob Roy,	F. Lambourne...	40.7	35:52	12:22:58	4:09:17	3:47:41
Emma T.,	R. J. Taussig....	48.4	11:25	12:47:45	4:10:30	3:23:05
Encinal,	L. Corson.....	45.3	20:15	12:38:35	4:15:12	3:36:37
Speedwell,	Ed. Howard....	37.6	48:27	12:10:23	4:17:00	4:06:37
Marylyn,	P. P. Hastings.....	35.4	58:50	12:00:00	Did not finish.	

This is the first race under the new H. P. rating rule of the A. P. B. A.

Death of A. H. W. Johnson, a Well-Known Racing Yachtsman

All Eastern yachtsmen will hear with sorrow of the death of A. H. W. Johnson at Larchmont on March 15, after a brief illness.

"Harry" Johnson, as he was always called, was a member of the Larchmont Yacht Club, and for a number of years acted as its secretary. He began sailing racing yachts at an early age, and was considered one of the best amateur sailors in the country. With James B. Sparkman, of New Rochelle, he sailed many of the new boats of designer William Gardner.

Perhaps the most important race he had won during recent years was the Manhasset Challenge Cup Race on Long Island Sound in 1912, when he sailed the Michicago, owned by a syndicate of Chicago yachtsmen, and won against several competitors. Among the racing boats with which Mr. Johnson built up a collection of cups of his own were the Newasi and the Red Wing.

Oakland Yacht Club

With a fine anchorage consisting of a basin about 600 feet square with 10 feet of water at low tide and a new club house in view, the Oakland Yacht Club is rapidly assuming an important place in California waters. It now ranks third as to fleet and membership of the clubs situated on San Francisco Bay. Some seventy-odd yachts comprise the fleet and the membership numbers about two hundred. Incorporation papers were taken out January 1, and a new set of by-laws were drawn up and adopted. One of the articles provides for a social fund derived from a percentage of the dues collected and the entertainment committee, led by George Fieherling, promises some lively times for the members.

The crews of the different vessels are hard at work scraping and painting, getting ready for the spring opening. Many hard races are expected, for there is keen rivalry existing among the yacht owners. The officers for the year are: Commodore, Eugene Schaefer; vice commodore, Bert Watkinson; secretary, Robert E. Mudge; treasurer, A. F. Lambourne; measurer, J. Sherry; port captain, "Dad" Oden; board of directors, William E. Scully, Harry Pulcifer, J. Sherry, F. Rittigstein, B. La Coste; regatta committee, F. Rittigstein, J. Sherry, F. Fisher.

Stuyvesant Yacht Club Officers

The following list of officers for the Stuyvesant Yacht Club, in Pelham Bay Park, will serve for the year 1914: Commodore, J. A. Muller; vice-commodore, F. H. Hegler; rear commodore, J. F. Nelson, M. D.; recording secretary, G. A. Liptay; financial secretary, W. L. Cree; treasurer, C. S. Ogden; measurer, C. H. Clapper; fleet surgeon, Dr. R. Butler; fleet chaplain, Dr. E. P. Kingsland; board of directors, Dr. H. Bruening, J. H. Jones, W. C. Cartwright, P. W. Hoenack, Wm. J. Hogg; regatta committee, C. H. Clapper, C. S. Ogden, F. H. Hegeler, H. P. Fiske, W. F. Olpp; law committee, E. J. Krugg, W. A. Hansen; auditing committee, F. H. Barry, W. A. Hansen, A. G. Kirchner; membership committee, C. S. Ogden, F. Schottky, J. Wylie.

Racing Prospects on Chesapeake Bay

There is going to be some real racing on Chesapeake Bay this year judging from the number of new boats they are getting down there. Last year Soya II and Sue were brought down from Long Island Sound, and the latest addition is the Class "Q" Suelew, which has just been bought by Chas. E. Henderson, Jr., of the Chesapeake Bay Yacht Club. Before the close of the month it is possible that two or three modern Class P boats will be owned by Chesapeake Bay yachtsmen. A. I. DuPont and T. C. DuPont are both contemplating boats in this class, as they have their eyes on the Governor Goldsburgh's Cup, while a syndicate of Baltimore Y. C. members is also prepared to buy in this class if any other boats are bought. The Chesapeake Bay Yacht Racing Association is going in for more racing than usual. It will run a 100-mile race scheduled for June 20, the course being from Baltimore to Sharp's Island light and return. The Association cruise and race week begins on August 22. All of the races are open to visiting craft, both sail and power.

Harlem Yacht Club Dinner

Members of the Harlem Yacht Club gave a complimentary dinner to Ex-Commodore J. A. Crowley and his crew in recognition of their good work in winning for the club the Brooklyn Challenge Cup. The dinner was at Shanley's on Feb. 28, and about seventy-five yachtsmen, mostly members of the Harlem Yacht Club, attended. This is the second time that the Harlem Yacht Club has held the Brooklyn Challenge Cup, it having been formerly won by the sloop Mopsa, owned by the Sullivan brothers.

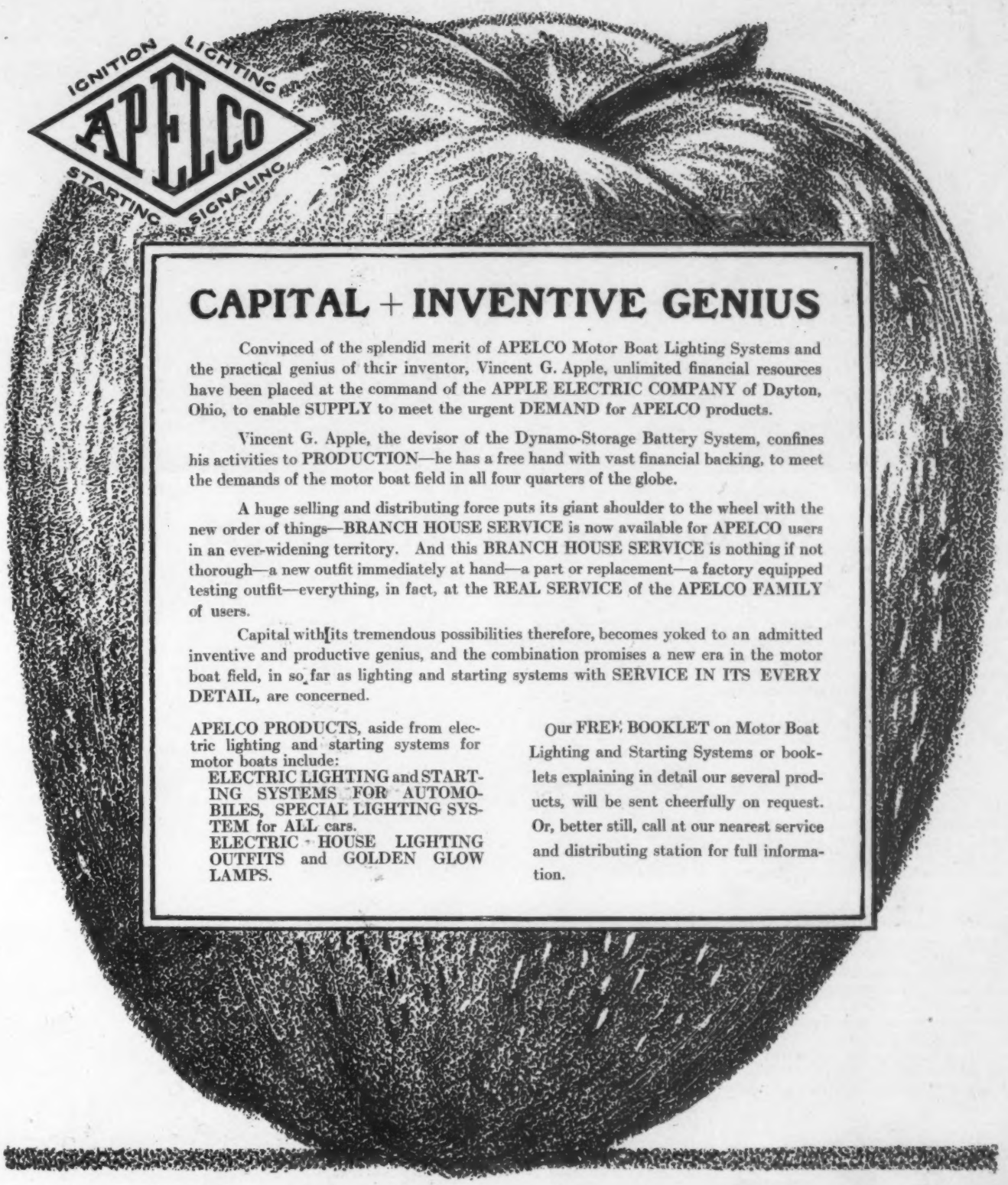
The Lundin Housed Power Lifeboat

A type of motor boat that is causing quite a sensation in marine circles is a queer looking housed over scow-like craft built of sheet steel that went down the East River on Friday, March 13, to Gravesend Bay, and on Saturday went out to sea for practical tests on the ocean.

This craft is the invention of Capt. A. P. Lundin, president of the Welin Marine Equipment Company, of Long Island City, and is the kind of power lifeboats we may soon expect to see included in the boat equipment of ocean liners. The boat is the same one seen at the New York Motor Boat Show, only she has since been housed in.

This boat is uncapsizable, unsinkable—as the double bottom forms a series of air-tight compartments—and is fitted with self-bailing scuppers. A 24-horsepower motor, installed in a metal, watertight box, drives her over six knots an hour, and is belted to a dynamo which furnishes electrical current for the operation of a small Marconi wireless outfit, which has a radius of action of 50 miles in the day time and 75 miles at night.

THE LUNDIN ENCLOSED LIFEBOAT WITH WIRELESS OUTFIT ON HER TRIAL TRIP



CAPITAL + INVENTIVE GENIUS

Convinced of the splendid merit of APELCO Motor Boat Lighting Systems and the practical genius of their inventor, Vincent G. Apple, unlimited financial resources have been placed at the command of the APPLE ELECTRIC COMPANY of Dayton, Ohio, to enable SUPPLY to meet the urgent DEMAND for APELCO products.

Vincent G. Apple, the devisor of the Dynamo-Storage Battery System, confines his activities to PRODUCTION—he has a free hand with vast financial backing, to meet the demands of the motor boat field in all four quarters of the globe.

A huge selling and distributing force puts its giant shoulder to the wheel with the new order of things—BRANCH HOUSE SERVICE is now available for APELCO users in an ever-widening territory. And this BRANCH HOUSE SERVICE is nothing if not thorough—a new outfit immediately at hand—a part or replacement—a factory equipped testing outfit—everything, in fact, at the REAL SERVICE of the APELCO FAMILY of users.

Capital with its tremendous possibilities therefore, becomes yoked to an admitted inventive and productive genius, and the combination promises a new era in the motor boat field, in so far as lighting and starting systems with SERVICE IN ITS EVERY DETAIL, are concerned.

APELCO PRODUCTS, aside from electric lighting and starting systems for motor boats include:
ELECTRIC LIGHTING and STARTING SYSTEMS FOR AUTOMOBILES, SPECIAL LIGHTING SYSTEM for ALL cars.
ELECTRIC HOUSE LIGHTING OUTFITS and GOLDEN GLOW LAMPS.

Our FREE BOOKLET on Motor Boat Lighting and Starting Systems or booklets explaining in detail our several products, will be sent cheerfully on request. Or, better still, call at our nearest service and distributing station for full information.

THE APPLE ELECTRIC COMPANY

Distributing and Service Stations

ATLANTA.....10-12 E. Harris St.	DETROIT.....972 Woodward Ave.	PHILADELPHIA.....210-12 N. 13th St.
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CHICAGO.....64-72 E. 14th St.	LOS ANGELES.....1226 S. Olive St.	SEATTLE.....1628 Broadway
CINCINNATI.....811 Race St.	NEWARK.....290 Halsey St.	TORONTO.....469 Yonge St.
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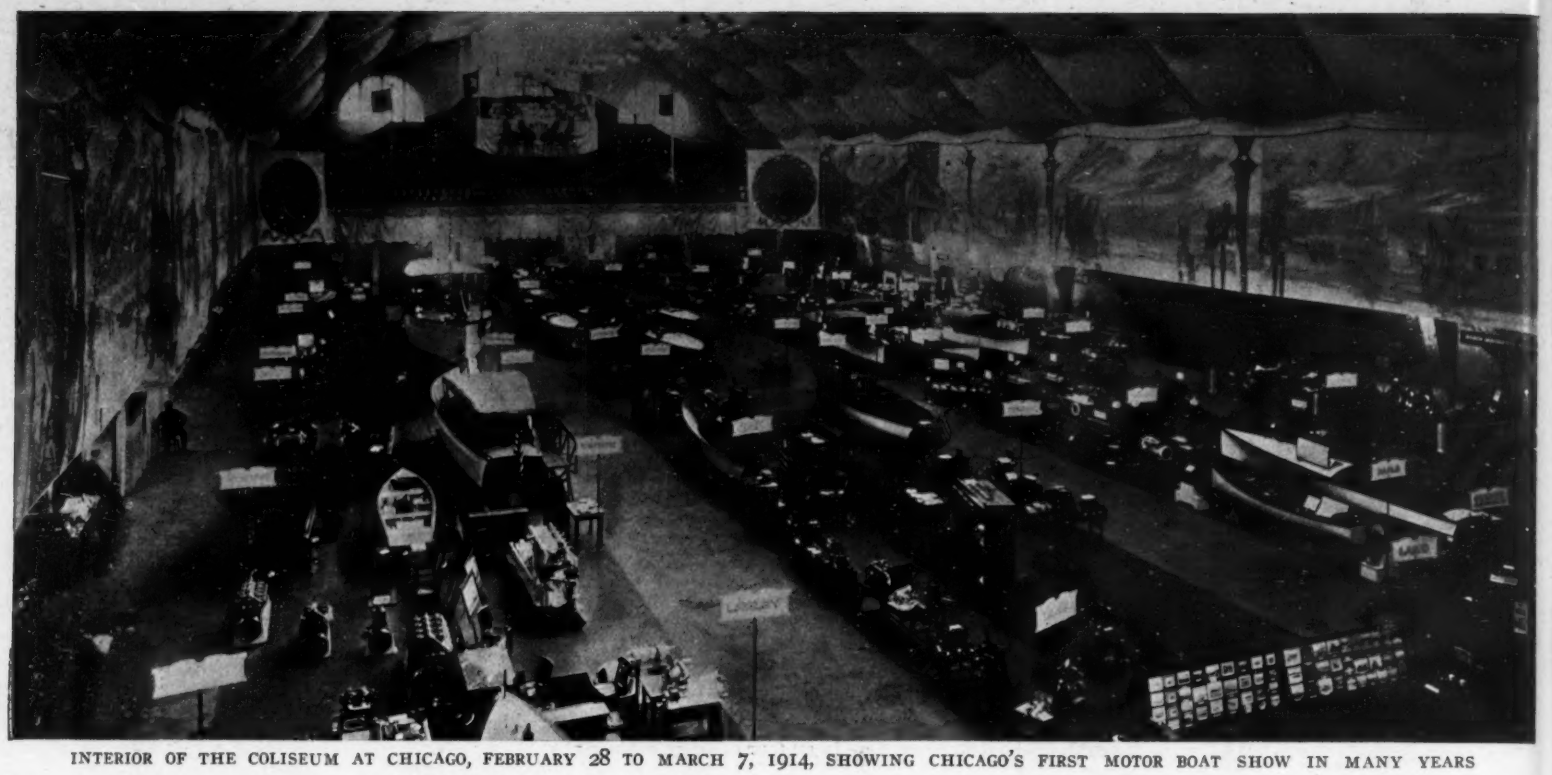
Factory; DAYTON, OHIO, U. S. A.

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.



INTERIOR OF THE COLISEUM AT CHICAGO, FEBRUARY 28 TO MARCH 7, 1914, SHOWING CHICAGO'S FIRST MOTOR BOAT SHOW IN MANY YEARS

Of Interest to the Skipper

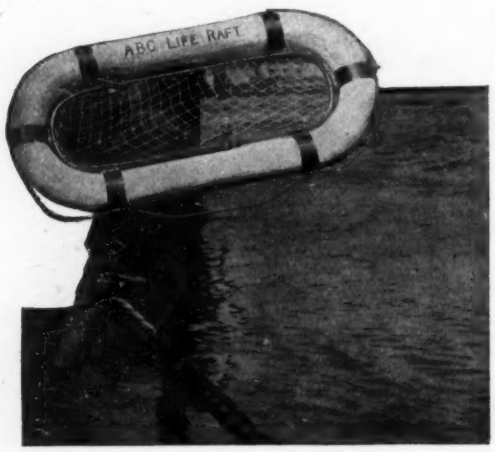
A-B-C Life Rafts

Balsa, in Spanish, means raft. The Balsa tree has long been used by the natives of Central America for making rafts, as it is lighter than cork. Some call it cork wood and the lightness with which a huge tree trunk floats upon the water has astonished many travelers in the tropics. In getting out the heavy Honduras mahogany or Kokobolo, woods that are so heavy they would sink in water, the natives lash a couple of Balsa wood trees to them and so float them down the rivers to the seacoast.

A-B-C life rafts, made by the Welin Marine Equipment Company, of Long Island City, N. Y., are made of this Balsa wood; a raft 5 feet long and half as wide can easily be picked up and thrown overboard by one man, for with net life line and all fittings it only weighs forty-five pounds. Covered with white-painted canvas, stenciled with the yacht's name, it looks well stowed on top of the cabin house and imparts to the timid ones a feeling of confidence, for it is a real life raft—not a toy.

An important feature of the life raft—which is true of all A-B-C life belts and ring buoys—is that this wood does not sweat as a cork buoy does in changing temperatures, rotting its canvas.

The hammock-like net on the inside affords a lot of fun when in swimming and the life lines around the outside are all useful when the raft is needed. The accompanying illustration shows how one man can readily pick up one of these rafts.



A-B-C Life Raft for motor boats which weighs only 45 pounds

Maxim Silencers for the Evinrude

The manufacturers of the Evinrude Detachable Rowboat Motor have added another exclusive feature to their motor. This is a Maxim Silencer, which is built specially to suit the Evinrude and is interchangeable with the present exhaust pipe in both 1913 and 1914 models. The

Maxim silencer on Evinrude Detachable Motor

Evinrude has always been a very quiet, smooth-running motor, but the addition of the Maxim Silencer renders it as noiseless as is possible to get a gasolene motor.

By special arrangement with the manufacturers of the Silencer, the Evinrude Company say they have exclusive use of this device for portable motors.

While the Evinrude announcement this year mentioned many of the new features, such as the built-in reversible magneto, no mention was made at that time of the compensating device which governs the steering of the Evinrude. This device was added to 1914 models, and it is so constructed that the makers claim that it absorbs all vibration when the engine is running over eight miles an hour.

U. S. Lifeboats for Canada

The Canadian Government, after demonstrating in actual use the value of the U. S. type of life boat powered with a 6-cylinder, 4-cycle, 40 horsepower Holmes motor, has decided to equip its stations with Canadian-built boats of the type. The first to be built on the Pacific Coast has been completed recently at Vancouver, B. C. Up to this time all the boats of heavy power were manufactured in the East and shipped across the continent to their destination.

Although the United States has many of these boats in commission, and Canada already has two, this is the first one to be built in the Dominion. She proceeded under her own power to Ucquelot, on the west coast of Vancouver Island, to take the most important post in the Dominion Life-saving Service on the coast. The boat was designed by Capt. C. H. McLellan, of the United States Life-saving Service, and embodies every known feature of safety that modern science can apply to make a boat absolutely safe. Motive power for the Ucquelot boat is furnished by a 35-40-horsepower motor, built by the Holmes Motor Company, Inc., of West Mystic, Conn., this engine having been selected by the United States Government for its boats on account of the hard service and reliability demanded. The motor develops a speed in this Canadian boat of 10 miles an hour. The machinery is enclosed in a watertight compartment, with all controls led through stuffing boxes to the outside, where they are in proximity to the helmsman's hand. A feature of the installation is the guarding against inflamable vapors in the motor compartment. The compartment is cemented and lined with metal, and all gases are instantly scavenged by a device attached to the intake of the carburetor. Kerosene, if need be, may be employed as fuel with good results. This installation, perfected by the Holmes Company, will be embodied in many large-sized cruising yachts built this year.

Lifeboat for Canadian Government, equipped with 35-40 horsepower Holmes motor

Invention of the Detachable Marine Motor

To those who have ever used or known the convenience of one of these little Outboard or Detachable Motors that convert a rowboat, tender or canoe into an efficient power boat, the development of the Detachable Marine Engine or Rowboat Motor forms one of the most interesting pages of gasolene engine history. There are today about a dozen different firms building these motors in the United States, all of them in the Middle West. Yet only six months ago there were only four firms making this type of engine, while less than a year ago only three were on the market. Go back another year or two and only one firm was making them.

The thought that strikes one is when these

Waterman PORTO Motor

Makes a Motorboat of Any Boat in Five Minutes.

1914 MODEL THE RESULT OF 9 YEARS EXPERIENCE.

THIS illustration shows something of the beauty of the "Waterman"—but don't you buy any motor by the looks alone. The all-important thing to get is certainty that the motor will give lasting satisfaction, and the only way to be sure of this is to bank on the experience of others, and the reputation and standing of the factory behind the motor. Let "the other fellow" experiment with the untried imitations. Keep your money until you know what you are buying.

3 H. P.
Weight 59 Lbs.

Most Power for the Price.
Most Power for the Weight.

The Waterman "Porto" is the original outboard motor. It is guaranteed for life. Nine years successful use—25,000 delighted "Waterman" owners and every one a "Waterman" booster. The "Waterman" fits any shaped stern (attached or removed in a jiffy) and drives a rowboat, dinghy, tender or other small boat eight to ten miles an hour, thirty miles on a gallon of fuel.

Buy Direct from Factory

Freight Prepaid Anywhere in the United States.

Don't buy an outboard motor of any make until you get our free engine book and learn the "Waterman" terms and price, and find out about the superior features of the "Waterman." You will be sorry if you fail to insist upon these features in the motor you buy:

Carburetor, not "mixing valve;" 3 Piston Rings instead of 1; Removable Bronze Bearings; 10½" x 16" Propeller; Independent Rudder; 25 feet of tiller line, steers from any part of the boat; Noiseless Under-Water Exhaust; Bronze Gear Pump, forming Valveless Water Circulation System; Spun Copper Water Jacket, highly polished; Ignition: Bosch, or any other strictly high grade high tension magneto; or by battery. DEMAND THESE FEATURES IN ANY OUTBOARD MOTOR YOU BUY—OR YOU ARE NOT GETTING THE WORTH OF YOUR MONEY.

Immediate delivery assured, either direct from Factory or from nearest distributor's stock. Keep the Agent's Profit.

Postal brings free engine book and full information.

Waterman Marine Motor Co.
403 Mt. Elliott Ave.
DETROIT, MICH.

Read what "Waterman" owners say on next page——

Waterman "PORTO" Motor

The engine with 9 years' enviable reputation---a dozen exclusive, superior features---25,000 satisfied owners. Read these few of the hundreds of unsolicited letters that fill our mails. Then ask yourself if the "Waterman" isn't just what you need to make a delightful summer (and many more) for yourself and family.

Brevard, N. C., Feb. 8th, 1914.

WATERMAN MARINE MOTOR CO., DETROIT, MICH.

Gentlemen:—Permit me to remark that the engine which I got from you last summer is the best and most reliable gasoline engine I ever saw. This morning with the mercury showing 12 degrees, with ice in and around my boat, a single turn of the crank was all it required to start her. There isn't another gasoline engine in the county that would have started with so little effort.

Very truly yours,
J. J. MINER.

Hopedale, Mass., Jan. 28th, 1914.

WATERMAN MARINE MOTOR CO., DETROIT, MICH.

Gentlemen:—I installed the engine that I bought from you last spring and started it right off the first turn, and it ran fine all summer. I am very much pleased with it. You certainly have a good engine, and I have recommended it to a lot of friends and they say it is a dandy—no trouble about starting it at all. As one of my friends said to me one day when I was taking him out,—all you have to do is to turn on the gasoline and blow at it and away she goes.

Yours respectfully, WM. TEMPEST.

Pretty Soft

Hitting 'er Up!

Mr. Lyman H. Dixon, 11 E. 24th St., New York City, whose outfit is shown in the cut on the left, states that he will gladly write to anyone who is at all in doubt as to the absolute dependability of our engines, and will gladly answer questions of any kind regarding the engines from the standpoint of the user.

Petersburg, Alaska, Jan. 21st, 1913.

WATERMAN MARINE MOTOR CO., DETROIT, MICH.

Gentlemen:—I received the "Porto" engine all in good shape and have given it some hard tests. I have been running it almost every day since I received it and have never had any trouble whatever. They have the ..... backed off the map in my estimation, also the ..... motors.

Respectfully yours,
W. H. COURTNEY.

Adelaide, Australia, 1/8/14.

WATERMAN MARINE MOTOR CO., DETROIT, MICH.

Dear Sirs:—You will be interested to know how the "Porto" got on at the river near here. The motor was very much admired and in all we ran about 60 miles. I was able to demonstrate its power by towing up stream against wind and tide another big sea boat containing four men.

Yours faithfully,
W. T. SHANASY, D. D. S.

Sydney, N. S. W., Australia, Jan. 1st, 1914.

WATERMAN MARINE MOTOR CO., DETROIT, MICH.

Gentlemen:—I am pleased to report that my "Porto" Motor is driving a heavy 16 ft. row boat. On Christmas Eve I was towing boats nearly all day on the Hawkesbury River and had no trouble whatever.

Yours faithfully,
GEORGE WALKER.

Beaver Dam, Wis., Sept. 22, 1913.

WATERMAN MARINE MOTOR CO., DETROIT, MICH.

Gentlemen:—The motor engine got here in good condition. I have given it a good trial, and in first running the machine I had no trouble whatever. It has a high speed and good power. I am well satisfied with it, as it couldn't be expected to do any better.

As ever yours,
FRED SCHILLER.

International Falls, Minn., August 8, 1913.

WATERMAN MARINE MOTOR CO., DETROIT, MICH.

Gentlemen:—In regard to the race with the ....., might say that we did not have the race we expected to.

Last Sunday one of the ..... owners came along while I was out for a ride and he wanted a race with me. He got it, and says he is satisfied. He ought to be, as we ran about a mile and a half and he came out about a quarter of a mile behind.

Yours truly,
R. L. DAVISON.

Bayview, Banks Road, Parkstone-on-Sea,
Dorset, England, July 10, 1913.

WATERMAN MARINE MOTOR CO., DETROIT, MICH.

Gentlemen:—Kindly send me a catalog and price list of your Outboard Porto Motor with Magneto. **I had one of your Outboard Motors in California in 1908,** and it was very satisfactory.

Yours truly, OVEREND G. ROSE.

Minneapolis, Minn., Nov. 4th, 1913.

WATERMAN MARINE MOTOR CO.,
DETROIT, MICH.

Gentlemen:—I just returned from my hunting trip and I can't say enough for my engine. We made a trip from Minneapolis to Lake Pipen and back. I figure we made good two hundred miles and the engine worked fine considering the weather which was awful cold. Had no trouble at all. Believe me, I sure gave it a test, for the Mississippi is awful swift in places.

Yours very truly.
D. T. LOLLIS.

WATERMAN MARINE MOTOR CO.,
DETROIT, MICH.

Gentlemen:—I here enclose a photo of the boat as promised, with motor attached and sails set, but at the time it was taken was not going full speed. You will see she looks like a very heavy boat, and she is, too—built of one-inch teak planking, 24 ft. by 10 ft beam, with a large freeboard.

I have not taken the measured mile yet, but the motor drives the boat in slack water, I should say, about four and one-half knots per hour, which I think is very good indeed.

I am well pleased with the engine in every way.

Yours faithfully.
C. FOTTER,
Str. "Munepoor," Rangoon, India.

The "Waterman" Beats the Wind.

An Ideal Canoe Motor.

Send postal for free engine book and convince yourself that the Waterman is best.

Waterman Marine Motor Co.

403 Mt. Elliott Avenue

DETROIT, MICHIGAN.

SPAR

LUXEBERRY

VARNISH

Competitive Cup donated to the Detroit River Yachting Association by Berry Brothers, Inc.—a replica in copper and silver of the original varnish kettle, from which the largest varnish business in the world has grown.

It's Waterproof

First *in* finish and nearly always first *at* the finish—are boats varnished with Luxeberry Spar.

Remember this when "fitting out" time comes and use or specify Luxeberry Spar. It's the one waterproof, weatherproof and windproof marine and outdoor varnish.

Luxeberry finished craft are spic and span from April to the season's "fag end," for Luxeberry defies wear and can't turn white.

Our fifty-six years of varnish-making experience is your assurance of satisfaction.

Look for the Luxeberry trademark at your dealer's. If you want help or advice, feel free to write us.

BERRY BROTHERS
(INCORPORATED)
World's Largest Varnish Makers
Established 1858

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In Principal Cities of the World

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motors were invented and who was the first to adopt the internal combustion engine for use in this way. Let us start from the beginning and watch the development.

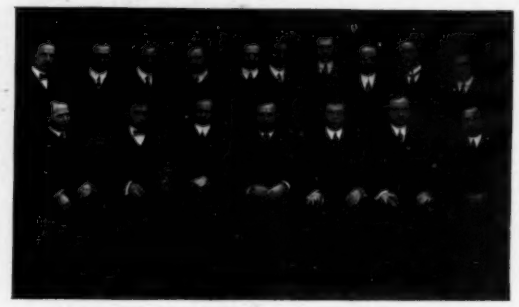
In 1903, while a post graduate student in law at Yale University, Mr. C. B. Waterman owned a motor cycle—one of the early American models with all the frailities of its kind—which he used with more or less pleasure on the roads about New Haven. Having an inborn love for mechanics in general and gasolene engines in particular, he began to investigate the engine and to study its ailments, improving its mechanism and its behavior in many ways.

One day, when he had taken the engine out of the machine, its power in comparison to its light weight impressed him and the idea occurred to him of a detachable marine motor. During the balance of 1903 and the early part of 1904 he occupied his spare moments in making sketches of such a device, gradually working the idea into practical form. He completed his legal training, was admitted to the bar in 1904, and returned to his home in Detroit, Mich., to take up the practice of patent law. For nearly a year the law took his entire interest; and then, seeking out a friend who operated a machine shop, he had him build the first Porto Motor, using a second-hand motor cycle engine from the plans he had evolved. Before this was even finished, chance was found for improvements, and the device started a gradual development.

In the winter of 1905 a most convincing test was made on the Detroit River—then filled with floating ice—and it was decided to form a small company to build a limited quantity of the engines to give them an actual trial in the hands of the average user. The company was formed and the engines built by the Caille Company, under C. B. Waterman's personal supervision. This company up to that time was in other lines of manufacture and had never built a gasolene engine. These first Porto Motors were shipped to many parts of the United States. They were of the air-cooled type and ran well in cool weather, but had their limitations in summer. With only the change to water cooling, they became a success. The company was changed to a corporation; a factory was built and equipped and an advertising campaign started in 1907, and before it had been going a year C. B. Waterman gave up the law and took charge of the Waterman Marine Motor Company.

The new 1914 Waterman-Porto motor, with magneto and underwater exhaust

Beginning with their earliest models, 1906, the Waterman motors steered by swinging the propeller and also were arranged for the raising and lowering of the propeller to suit the sterns of different boats. This latter arrangement was found to be unnecessary and the steering by the propeller was very unsatisfactory. Mr. Waterman therefore designed a rudder for use on his later models (a feature since adopted by others), controlled by tiller lines, so that the operator can steer from any part of the boat. At the same time this company adapted the underwater exhaust, this being recognized as the only system for absolutely silencing a marine engine. In 1911 they furnished their engines with high-tension magnetos. These years of experience have enabled the Waterman Company to make great strides in the development of this type of engine. The Waterman Porto for 1914—so the makers say—although developing 3 horsepower (according to A. L. A. M. rating — 4 horsepower), weighs practically the same as their 2 horsepower models of 1913.



Combined Splitdorf-Apple selling and distributing-force

Splitdorf and Apple Electric Combination

With the recent reorganization of the Apple Electric Company, of Dayton, Ohio, by the powerful financial support of the Splitdorf Electrical Company, of Newark, N. J., the selling and distributing of the products of the Apple Company will in future be conducted through the ever-widening branch houses of the Splitdorf organization. At a recent "sales policy" meeting of executive and branch house heads of the Splitdorf and Apple outfits, held in Dayton, Ohio, an interesting photograph was taken, of which the above is a reproduction. In the photograph are:

From left to right (standing)—F. A. Cornell, business manager Apple Company; C. P. Brockway, H. J. Hinley, E. A. Kelley, R. S. Allen, European representative Apple Company; H. E. Borger, C. F. Succop, R. S. Preble, O. J. Rohde, F. A. Storer, president Buenos Aires Splitdorf branch.

From left to right (sitting)—E. A. Brackett, D. R. Walls, advertising manager Splitdorf Electrical Company; R. H. Croninger, V. A. Apple, president Apple Electric Company; C. W. Curtiss, general manager Splitdorf Electrical Company; W. J. Murray and H. F. Apple.

New Chicago Dealer for Sterling

The Sterling Engine Company, of Buffalo, N. Y., announce that Messrs. James M. Wait & Co., 1205 Michigan avenue, Chicago, Ill., have been appointed Sterling dealers for the Chicago district. James M. Wait & Co. have been in the marine engine business on the "Avenue" for five years; they bear a splendid reputation and have always been known as a reliable and energetic firm. A full demonstrating stock of Sterling engines will be carried on the floor of their building and already there are four Sterling engines ready for inspection. This office will also act as a Service Station for Sterling owners in the vicinity of Chicago, and full attention will be given to this important feature.

Japan Agency for Buffalo Motors

The Buffalo Gasolene Motor Company, of Buffalo, N. Y., has announced the appointment of Messrs. Andrews & George, P. O. Box 66, 242, Yokohama, Japan, as sales representatives for Buffalo marine engines in Japan and the adjoining islands.

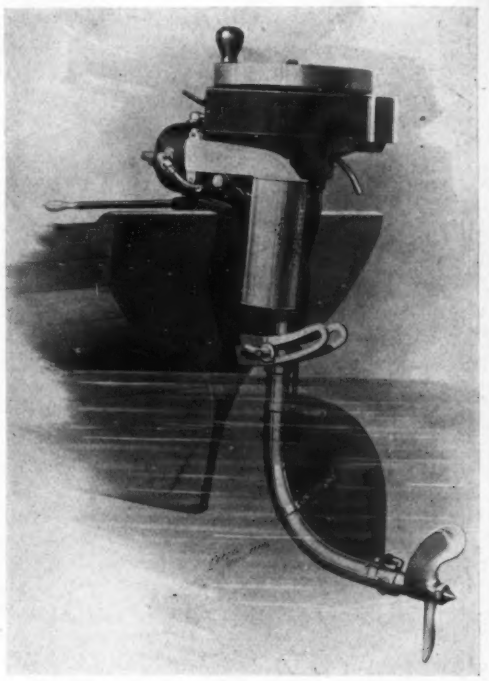
Messrs. Andrews & George are one of the oldest and most successful firms of Japanese importers and they are now successfully representing a long list of the leading American manufacturers. As Japan is one part of the world in which the Buffalo Gasolene Motor Company has not been successful in getting business, and as the firm of importers referred to has been without a satisfactory 4-cycle marine engine connection, the arrangement is very satisfactory from both sides. Messrs. Andrews & George will have a representative line of Buffalo engines at their showrooms as soon as shipment can be made and they will also be supplied with repair parts for Buffalo engines.

A New Gray Model

The Gray Motor Company, of Detroit, Mich., has just entered the detachable motor field and their latest model is a Gray Gearless Detachable Boat Motor, for rowboats and canoes. The makers claim that in this engine there are several new mechanical features which will be quickly recognized by experienced boatmen as desirable to incorporate in this type of motor.

Among the points which the Gray Motor Company claim in favor of this engine are that it is extremely light for the power, that it has the fewest working parts of any detachable motor in the market, and that it is gearless and valveless. The gear drive or transmission is a strong mechanical feature of this engine. There is no back lash of gears, no big loss of power in transmission, no noise in operation. The strong and smooth power of the motor is transmitted with minimum friction direct to the propeller drive. A vanadium steel flexible shaft forms the connecting link. It's the same type transmission and the same quality universal that you will find in automobiles. The vanadium steel, universal drive carries in a spring tube packed in grease. There is positively no chance for wear. The material entering in the construction of the universal is next to wearproof. The flexible shaft has been tested to its driving capacity of 7 horsepower. The most that it is ever called upon to deliver is 3 horsepower, a wide margin of safety. The engine has a bore of 3 inches, stroke 2½ inches and is of the valveless type. The Gray gearless crank case is made of aluminum and the company say they can thus give a bigger motor, more power, and still keep down the weight.

The Gray Gearless weighs actually 52 pounds, including engine and propeller equipment, battery and coil.



The new model, Detachable Gray motor

Consider Lighting—Now!

You are having your boat overhauled—or figuring on a new one.
Now is the time to consider lighting.
You don't want a lighting system that requires a lot of attention—you have enough mechanism to look after.
You don't want a lighting system that frequently requires the services of an expert electrician—it may fail when you are far from help.
You *do* want a system that is simple, reliable and *actually* convenient.

Now is the time to Install Prest-O-Lite

Prest-O-Lite installation is very simple. Any average mechanic can do the work in a few hours.

When once installed, Prest-O-Lite requires practically no attention. There is no clutter of dynamos, batteries, switchboards or wires—no delicate connections or mechanism to get out of order.

Anyone can understand and operate Prest-O-Lite.

Prest-O-Lite has been proven by years of satisfactory service to be the most convenient, dependable and economical light for all kinds of boats.

It costs less to install and is more economical to operate, than any electric system.

Prest-O-Lite in different sizes gives ample supply of light for any size of boat.

It is in use on the finest boats for searchlight, port and starboard lights, and cabin fixtures.

To Start a Cold Motor Easily

Prime it with acetylene. A "frozen" engine will then start, without fail, in zero weather, on two or three slow, easy turns of the crank. The Prest-O-Primer uses acetylene, for this purpose, at low pressure, and uses it in a "thin" mixture which has just the same effect on an engine as a "thin" gasoline mixture. The advantage is that acetylene, being a ready-made gas, furnishes a fuel that fires unfailingly in any weather.

Costs little, easily installed. Makes starting with any "rear starter" or hand crank, so easy, quick and positive that you need no complicated mechanism. Works from the same Prest-O-Lite you use for lights.

The Prest-O-Lite Co., Inc.

238 Speedway, Indianapolis, Ind.

Exchange Agencies Everywhere

The gas lamps are easy to disconnect if you wish to remove them during the day. Any oil lamp may be made into a combination gas and oil lamp in a few moments with the Prest-O-Lite Oil Lamp Adapter.

"Push-the-button" Convenience

By adding a Prest-O-Liter to the regular equipment, you can have "push-the-button" convenience for searchlight and signal lamps. Easily installed. Makes it unnecessary to light the lamps with a match, and enables you to turn them on and off as needed, with superb convenience.

Get Complete Information

Before you buy any lighting equipment, get the **real** facts on lighting.

Get **all** the facts about **all** lighting systems.

To do this, use the coupon.

THE PREST-O-LITE CO., Inc.

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Send complete information on Motor Boat Lighting to

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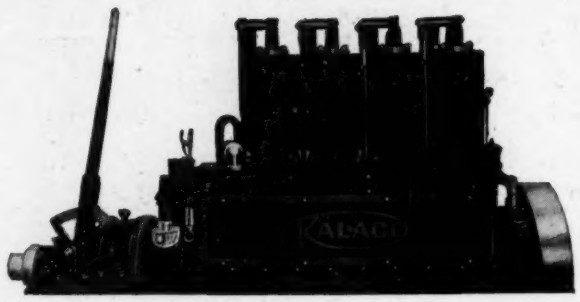
RALACO the SILENT SIMPLIFIED ENGINE



AN ENGINE FOR THE MAN WHO WANTS

Satisfaction

The satisfaction of having an engine that you are proud of means a great deal in motor boating.

Reliability

The utmost confidence in the reliability of the engine in your boat is what the owners of **RALACOS** have.

Built in sizes from 10 to 75 H. P. Two—Four—Six Cylinder

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Neither Blisters Nor Cracks
It has lasting qualities unapproached by other varnishes. The heat of summer will not blister it—the coldness of winter will not make it crack—nor does the action of the rain and sun affect it.
Monarch Bull Dog Paint and Varnish Remover
is the only remover that satisfactorily removes old lead, zinc paint, enamel or shellac. Almost instantaneous when used on ordinary work. If does not evaporate readily and remains moist longer than any other. Does not burn or injure the hands in any way. Does not grow stale, guaranteed not to become rancid.
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"THE MOTOR THAT MOTES"

EQUIPPED WITH THE BRIDGEPORT VAPOR RECTIFIER

Absolutely no base explosions, giving *Safety*, *Flexible Control* and *Fuel Economy*. The **1914 BRIDGEPORT** possesses the advantageous features of the best two- and four-cycle motor, with the undesirable features eliminated. We term it *The Advanced Two-Cycle Motor*. We have fifteen sizes in work and pleasure models Send for free catalog L.

Our 1914 models are fitted with the Bridgeport Oil Transformer, with which they operate perfectly on

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YACHT SAILS are our specialty—both large and small.

AWNINGS, TRAP COVERS, Etc.—Canvas Work of all kinds.

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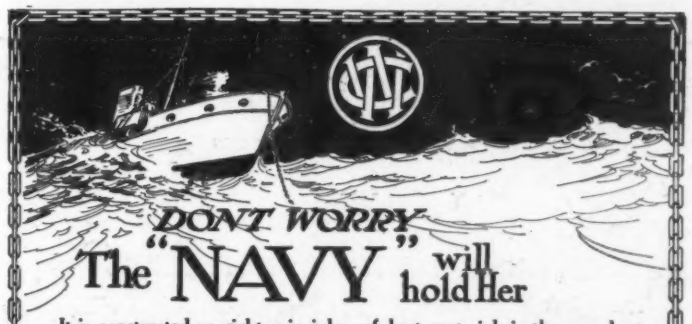

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It is constructed on right principles, of best material, in the very best manner. It is heavily galvanized to prevent rust. "V" shaped lug on end of shank insures correct holding position at slightest pull on cable. Strain coming above center of head throws flukes downward. Solid shank—no weakening hole. No pockets in head to bring mud to deck.

"NAVY" ANCHOR IS TESTED AND TRUSTED

You should ask your dealer for it. If he doesn't carry the "Navy," write us for nearest dealer who does.

Send for illustrated booklet of other specialties.

Ask your dealer for anchors, wheels, deck plates, compasses, row-locks, boat nails, hooks, cable chains, lights, lanterns, pumps—in fact anything, in the marine hardware line—up-to-date, dependable—backed by sixty-six years' experience.

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In response to the demand for auxiliaries in keeping with the high quality of **Winton Marine Engines,** we are producing Engines for Yacht Tenders and Generator Sets for electrical power purposes.

Heretofore, the equipment of Power Yachts has necessarily included noisy, vibratory and unclean auxiliaries which proved to be a source of trouble and annoyance rather than of pleasure and service.

Trouble and annoyance are now avoidable, for **Winton Design, Methods** and **Facilities** are producing Tender Engines and Generator Sets of such high mechanical excellence as to insure maximum efficiency and a smooth and quiet operation that will amaze the most exacting user.

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Decorated Table Service for Yachts

The true yachtsman—who always takes as much pride in his craft's cabin furnishings as in her equipment above deck—will appreciate our exceptional facilities for supplying China and Glass Services especially adapted to his needs.

We specialize in substantial, artistic wares, bearing an *individual* design—the Owner's monogram, club insignia, private signal or colors, as he desires. A design is never duplicated for other than the person for whom it was originally made—although a customer may match or add to his set to any extent at any time. We have equipped hundreds of Yachts of every type with such Services, including many of the most famous boats afloat. (List on application.)

"Irolita" Mr. E. W. Clark, Jr., Owner

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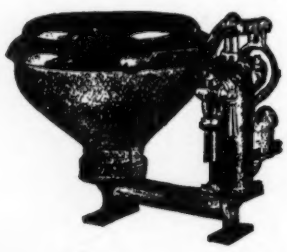
Over ***70*** *years in business*



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Where lives are at stake one doesn't take chances, and the selection of these propellers in preference to all others for so important a responsibility where absolutely uniform reliability and dependability are all important, speaks for itself.

All Genuine Harthan Propellers, whether for

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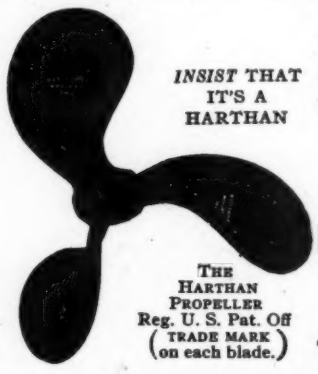
measure up to the highest possible standards. They are the wheels for those who want the **best.** They are no more expensive than most goods of inferior quality.



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10 SIZES 13 NUMBERS

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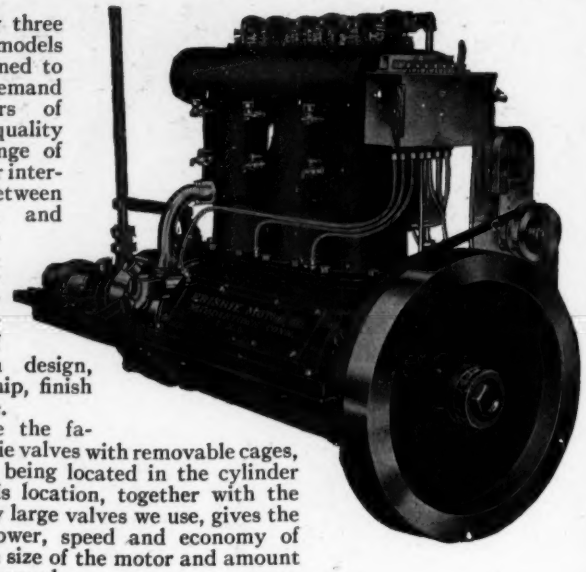
Announcing Two New Three-Cylinder Models of

FRISBIE Four Cycle MOTORS



These new three cylinder models were designed to meet the demand for motors of Frisbie quality with a range of horsepower intermediate between our two- and four-cylinder motors. They are strictly up to our standard of quality in design, workmanship, finish and service. They have the famous Frisbie valves with removable cages, the valves being located in the cylinder head. This location, together with the remarkably large valves we use, gives the greatest power, speed and economy of fuel for the size of the motor and amount of fuel consumed.

The cylinders are cast three en bloc. There are no grease cups—every part is lubricated by oil. Designed to run under full load from 5 to 10 hours without attention to lubrication. Equipment includes mechanical oiler, bilge pump and oil return pump, if desired. The 4¾ x 5 in. model is rated at 12-18 h.p., and the 6 x 6 in. model at 18-25 h.p.

KEROSENE OR GASOLINE

Frisbie Motors run equally well on gasoline, kerosene, distillate, benzine, alcohol, etc. No smoke or odor; the speed control is thoroughly flexible.

Write today for full specifications and prices

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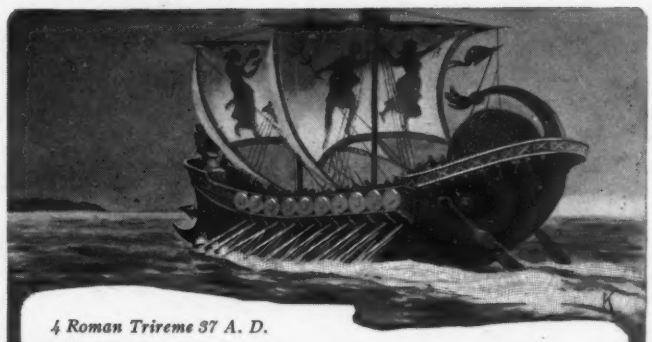

4 Roman Trireme 37 A. D.

Inspired by a Carthaginian galley stranded on their shores, the Romans improved on this and other ideas from the Greeks and Phœnicians until they had perfected the best fighting ships of the ancient world.

These classic men-of-war cruised the Mediterranean at a speed equal to modern French mail steamers. It is interesting to compare them with the champions of to-day equipped with

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Carried by famous winners in every class. Will be used on all three contestants for defense of the **America's Cup.**

Choose Lowell Duck for your next set of sails—lightest and strongest. Regular for cruising, special for racing. Ask your sail-maker to show you the Lowell Duck trade-mark on the end of the roll.

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FOR MOTOR BOATS

Lets the sleeper sleep—on board or ashore; stops that ear-splitting, nerve-racking torment—the exhaust; gives the trip a new joy, that of quiet and rest, and

Actually Aids Engine Efficiency—There Is No Back Pressure

Mr. Maxim, the well-known inventor, has perfected this Silencer on the same principles as his Rifle Silencer. Its like has never been known. It's what motor boat men have been longing for and dreaming of for years. Send for descriptive literature. Mention diameter and number of cylinders, also size of exhaust outlet.

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WORLD'S LARGEST MANUFACTURERS OF MARINE HARDWARE

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Don't Forget the Pyrene TRADE MARK Fire Extinguisher

IT is the one necessary part of equipment to a motor boat and the standard agent of fire protection which you must not forget. Pyrene overcomes the dangerous fire perils so frequent on motor boats—and Pyrene fire extinguisher is peculiarly adapted for the seemingly inaccessible gasolene or oil fire—ready and unfailing in efficiency *when you or your companions cannot step ashore.*

Write for booklet—proving the economy, efficiency and supremacy of Pyrene—Send postal to-day to nearest branch office.

Approved by the U. S. Steamboat Inspection Service
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ANOTHER TRIUMPH FOR THE EVINRUDE

It has always been the policy of the Evinrude Motor Company to construct their Detachable Rowboat and Canoe Motors so that they would be favorably compared with the finest Automobile Motors that are made.

After the highest obtainable efficiency in construction was arrived at, our engineers reported further improvements impossible, so we increased the number of exclusive Evinrude features, the latest one, which by the way, cannot be used on any similar device is the

FAMOUS MAXIM SILENCER

which can be applied to either 1913 or 1914 models. While the Evinrude has always been practically silent in operation, this addition makes it a veritable triumph.

The Evinrude is the only Marine Motor in the world having a

BUILT-IN REVERSIBLE MAGNETO

This Magneto is not affected by rain, waves or even complete submersion.

The Evinrude is built by the largest manufacturers of Rowboat Motors in the world. Capacity for 1914, 60,000 Evinrudes.

Makes a Motorboat of any Rowboat, Yawl or Dinghy in less than one minute. Weighs 50 lbs. Carries like a suitcase, and is so simple to operate that anyone can Evinrude.

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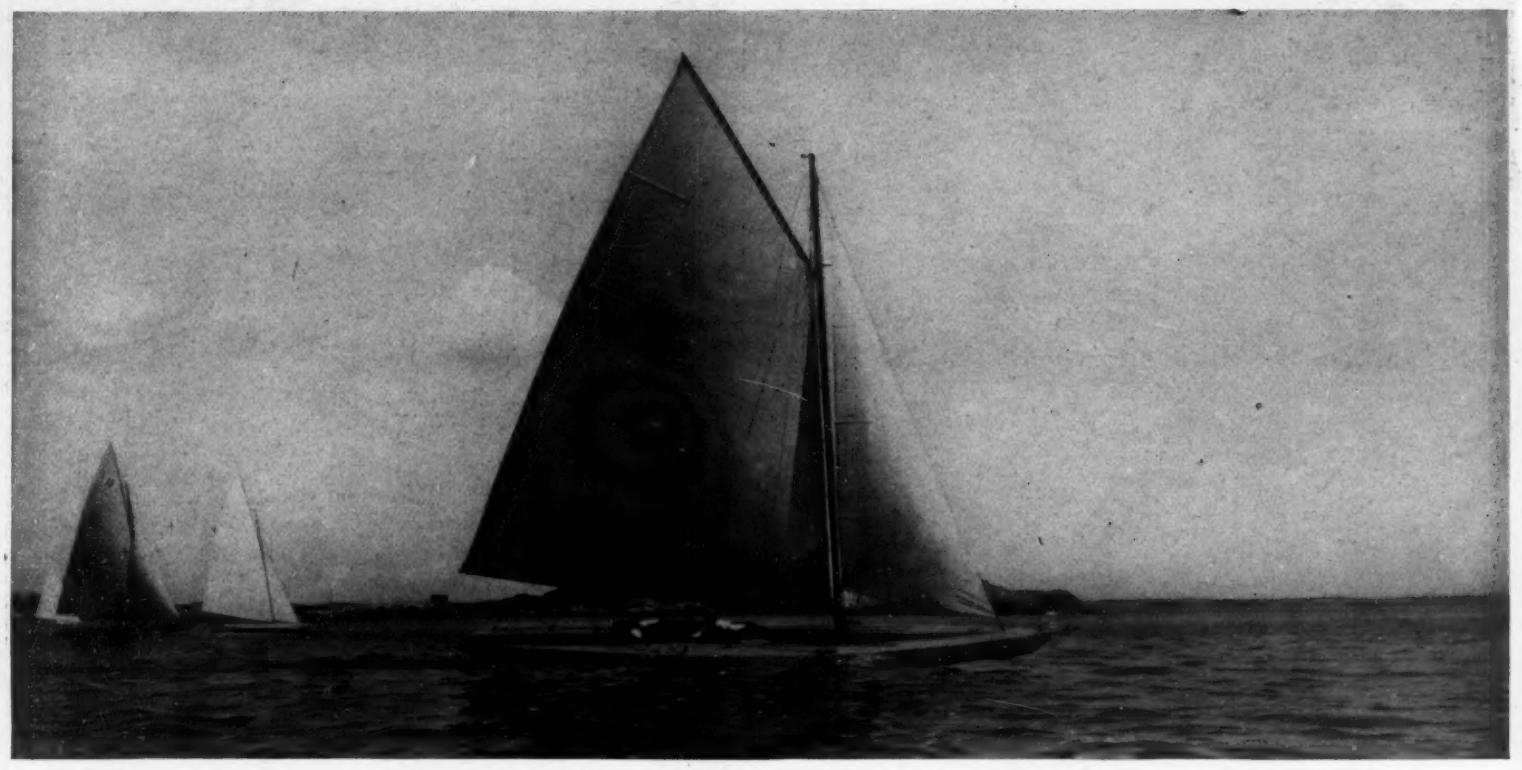
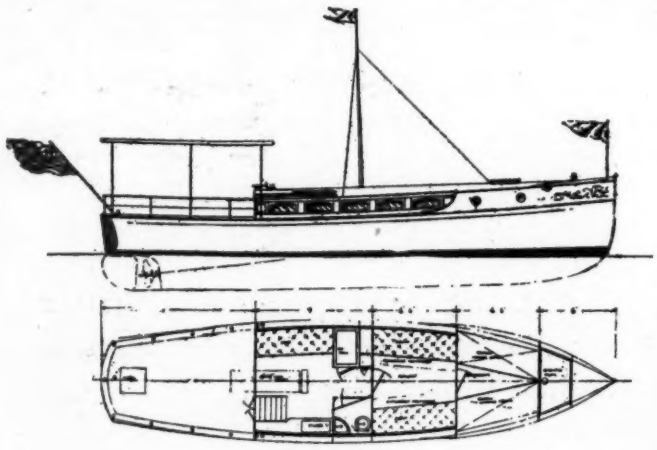


The champion *Sonder* boat Ellen eating out to windward with Wilson & Silsby's sails.

We made all of the sails used by the American *Sonder* boats last year. Everyone knows what the American team did to the German boats in the races for the President Wilson Cup So much were the Germans impressed with American sails that we have at the present time a lot of work on hand for German yachts. Enough said!

We are having made for us at the present time a full new line of specially woven yacht duck of the finest combed cotton. We can guarantee to give our customers something in canvas that is absolutely perfect.

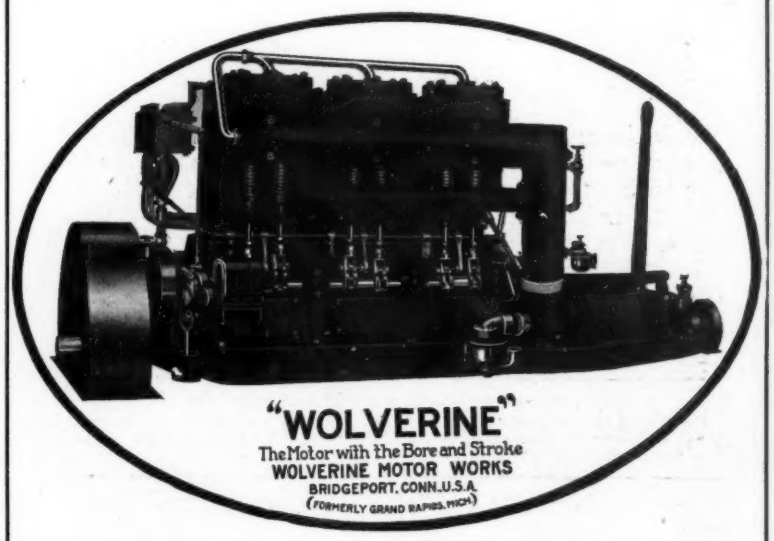


WE BUILD Yachts complete and there is no divided responsibility. Our 20th Century Motor, which we build in our own shop, is considered one of the leading engines. We are in position to build you a complete yacht, furnished and equipped, at prices that cannot be equaled when construction and finish are taken into consideration. Let US figure on your new yacht.

N. Y. Yacht Launch and Engine Co.

Morris Heights, New York

KEROSENE **PRODUCER GAS**



ALCOHOL WRITE FOR CATALOG NO. 70 **GASOLINE**

BE GUIDED BY THE VERDICT OF THOSE THAT KNOW

WHAT THE SHIPYARDS ARE SAYING:

We have used during 1913 and still are using Chicago Varnish Co.'s marine line. We like Navalite for shipyard work, for we can get it out of the way. That means dust proof and rain proof, as quick as the quickest drying varnish on the market. It is much the easiest flowing, does not skin over or gum the brushes and has that long lasting luster. Cabinoleum, Supreme Yacht White and Supreme Yacht Black have no equal.

SIGNED:

Greenport Basin & Construction Co., Greenport, N. Y.
George Lawley & Son, Inc., Neponsit, Mass.
Newport Shipyard, Newport, R. I.
Camden Shipyard & Const. Co., Camden, Maine.
Fyfe & Hittorff Shipyard, Glenwood, L. I.
Tuthill & Thorn, Greenport, N. Y.
Burgess Co. & Curtis, Marblehead, Mass.
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The Start at Larchmont ---Race of 50-Footers

Every yacht in this great race was finished with materials made by the Chicago Varnish Co.

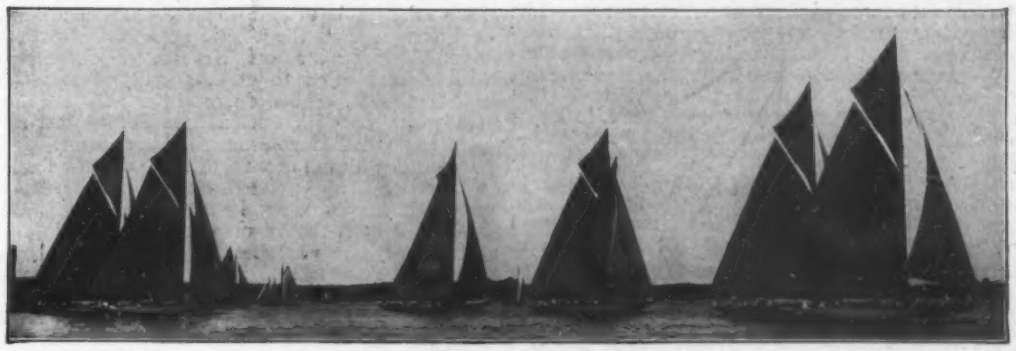
NOTHING ELSE WAS USED

Glenwood Shipyard, Long Island, N. Y.
Jan. 4th, '13.

CHICAGO VARNISH CO., Chicago, Ill.

Dear Sirs—The New York Yacht Club 50-foot racing class of 1913 were all finished with Supreme Yacht White, Cabinoleum and Navalite. Nothing else was used.

Respectfully,
(Signed) FYFE & HITTORFF.



Edwin Levick Photo, N. Y.

We submit the following list of Masters of Yachts, best known abroad, who have used Chicago Varnish Co.'s Marine Line for the season of 1913. We have tripled our output in New York and Boston, and have increased more than 100% our sales all over the country since last year. Names of Captains who have used it and recommend it:

John Bond	Steam	Yacht	Columbia	E. Pagel	Aux'l	Yacht	Atlantic	James Loersch	Schnr.	Yacht	Endymion
A. C. Berton	"	"	Iolanda	C. Hanscomb	"	"	Wild Duck	F. L. Iverson	Steam	"	Alvina
J. H. Crawford	"	"	Utowana	G. W. Scott	Steam	"	Aphrodite	G. W. Maskel			
W. P. Porter	"	"	Corsair	G. Potter	"	"	Rheclair	L. Miller			
A. Johnson	"	"	Winch'ter	P. Benzanson	"	"	Aloha	R. W. Sheldrake	Steam	Yacht	Speedwell
B. Dungan	"	"	Noma	H. Dixon	"	"	Virginia	J. Gabrielson	"	"	Niagara
W. Lewis	"	"	O-we-ra	T. Farrington	"	"	Vanadis	A. Corkum	"	"	Cypress

E. Sherlock	Steam	Yacht	Isis	Captain Lake	"	"	Vergemere	P. Netland	"	"	Ituna
N. Ferguson	"	"	Sultana	Captain Todd	"	"	Atlanta	W. L. McLaen	"	"	Warrior

Yachts sailing in all parts of the world in all climates.

WE POSITIVELY GUARANTEE NAVALITE NOT TO TURN WHITE IN EITHER FRESH OR SALT WATER. Send for illustrated booklet.

CHICAGO VARNISH CO. CHICAGO NEW YORK

"FOR LIFE"

The A. B. C. Life Raft for motor boats and yachts can be stowed on any cabin top. Handled by one man. Weighs 40 pounds. Will support eight persons in the water.

Strong, Serviceable, Handsome. Made from light tropical wood. Specially waterproofed, same as our A. B. C. Life Preservers. Lighter and more buoyant than cork. Canvas covered.

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Fitting Out

(*Continued from page 214*)

drawn back to form a loop, so that more of it can be forced into the seam. After caulking put some thin paint on the cotton to keep the water out, then point seams with putty and white lead. Don't drive the caulking in too hard, or when the boat goes overboard and swells it forces out the cotton. All seams should be pointed up before painting, whether or not caulking is done.

Varnishing

Before painting the outside of the boat scrape the decks, bright work and spars, if she is a sailboat, and varnish them. Apply the varnish as soon as possible after using the varnish remover and scraping, as the oxalic acid will turn the wood black if rained on. Several coats of varnish should be applied to do a good job, and each coat should be rubbed down either with very fine sandpaper or with curled hair before the next coat is applied if you want a high luster. It is often economy to put on a priming coat of shellac, followed by two coats of varnish, as the shellac dries almost immediately and the wood is thus preserved until the varnish can be applied.

Use only the very best grade of spar varnish for outside work, and in the spring of the year use a slow-drying varnish. The oil in the varnish makes for durability and long life, hence the slow-drying varnish with lots of oil will last longer than the quick-drying varnish, which has lots of turpentine in it. Do not ever attempt to use inside varnish on the outside of a boat.

Painting

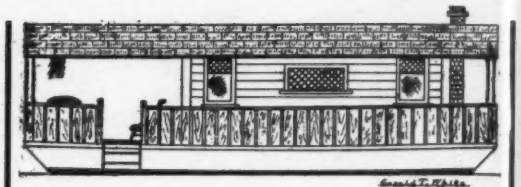
In these days of ready-mixed paints the amateur very seldom mixes his own, as a thoroughly satisfactory prepared paint can be had for marine use. Be sure to buy marine paints and not house paints, and get a good quality, even if you have to pay a little more.

There are many kinds of paint, from a yacht white to a hard enamel paint. The former gives a pure white, dull finish, which can be easily kept clean, as it is flexible, and every time it is washed a little of the paint comes off, leaving a fine white surface, while the enamel paints and other hard-drying paints, while easy to keep clean, flake and crack if the boat is roughly used and are so heavy that only a few coats can be applied, and the boat must be burned off at least once every two years. If a glossy finish is desired, and yet not an enamel paint, a light varnish may be mixed with white lead and thinned with turpentine.

If the old paint has been burned off it will be first necessary to apply a thin priming coat, followed by two or three coats brushed well in, and, lastly, a finishing coat. The priming coat should carry about one-third oil and be thinned with turpentine. Three coats at least are necessary. Where the old coats have not been burned off, two new coats on the topsides will be sufficient.

For the bottom of the boat a good copper or bronze paint is necessary. Copper paint can be purchased for from two to seven dollars a gallon, the higher prices being for the anti-fouling paints. The waterline and bottom of the boat is done after the hull is finished. Secure a long, thin batten (such as is used in making lattice work) and bend the top edge to conform to a section of the waterline. The batten cannot well be bent to follow the waterline its entire length, and the help of a friend who will hold one end of the batten while you are cutting in that portion of the line conforming to the batten's curve will help. By shifting the batten along from stem to stern the whole is painted in. If the waterline is cut in with the tang end of a small file it will not be painted out, and the score mark so made will prove of great assistance in painting up to the white, and so striking in the line cleanly and evenly throughout its length.

Good work cannot be done unless you get good brushes. It will be well to have a brush for every color used. For outside work a flat brush is best, from 2 to 4 inches wide, while a 4-inch flat brush should be used for the bottom paint. A couple of oval brushes are good for corners, etc., or for finishing work, where a beveled edge brush should be used.



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Northwestern Ice Yachting Ass'n

(*Continued from page 231*)

I would like to add a few words as a possible explanation for the success of the Madison "side-bar" boats. It may have been due to the light weather conditions, but the Madison boys don't think so. They point to the free-for-all which the Yellow Kid won in the fastest time made, and it is true that that race was sailed in a considerable blow. I think it possibly true that the speed of the Madison boats is due to the fact that the side-bars are pinched well in toward the center, and the runner plank truss, therefore, extends only over about the central half of the runner plank. This makes the big heavy "Hudson River" runner plank unnecessary, and still does not take all of the spring and elasticity from the plank. Of course, I do not think or claim that this regatta has proved that the Madison side-bar type is essentially faster than any other, but I do think that it proves that this type has not been entirely eliminated by superior construction, as other ice-yachting writers frequently claim. Unlike the old side-bar yachts, the masts on these Madison boats are stepped well forward of the runner plank and rake slightly aft, thus balancing the rig perfectly.

Value of a Brake Test

(*Continued from page 245*)

for a 5-inch motor at the same revolutions than the A———— people claim for a 4½-inch motor. There is, of course, some slight advantage in the ¼-inch extra stroke, but this does not compensate for the wide variation in power claimed."

What do you think? J. E.

You cannot be guided too closely by the American Power Boat Association's rating rule, as that formula does not take *actual* speed into consideration, and while perhaps accurate enough for finding cylinder volume, I do not think it can give a close enough estimate of power without knowing the speed of the engine.

Difference in design of various motors make a considerable difference in efficiency and power developed, as do the location and size of the valves.

The closest line on this engine that you give in your letter is that of the 24-horsepower S———— marine engine, and while these engines usually develop more than their rated power, yet I do not think that this last-mentioned engine, if you cut her bore down half an inch, would develop the power given in the table for the A————.

Frankly, I am not personally acquainted with the A———— engine sufficiently well to say whether or not it can develop the powers claimed, but, judging from these tests with other engines, I think it doubtful if it develops the full horsepower stated in the tables you quote at those speeds. The only way to find out would be to have your particular engine tested out under the brake by an impartial observer.

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